The Bradshaw Lecture

ON

RECTAL ALIMENTATION.

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MR. PRESIDENT,—When you first proposed to me and I accepted the honour of delivering the Bradshaw Lecture, you asked me whether there was any subject which was particularly occupying my attention at the time and I replied, "Yes, the question of Rectal Alimentation." It appeared to me to be very extraordinary that although this method of feeding patients dates from a remote antiquity and is at the present time constantly brought into requisition in both hospital and private practice, yet judging from the views which are frequently heard expressed both by teachers and students of medicine, little, if any, confidence is placed in its efficacy. At first I hoped that I might personally be able to add something definite to our knowledge of the subject by accurate observation at the bedside, and with this view I secured the help of our lecturer on chemistry at St. Thomas's Hospital, Dr. H. R. Le Sueur, who kindly undertook to make any chemical estimations which I might require. It seemed to me that if one had an empty colon and if one introduced into it known quantities of the various constituents of food, and left them to be dealt with by the bowel for some hours, one could easily wash out what remained and determine how much had been absorbed. But two great difficulties presented themselves: first, the impossibility of securing an empty colon—that is to say, a colon which contains no substances which, if washed out with the remains of the nutrient enema, would invalidate the accuracy of the estimations. For even when patients took nothing by the mouth for a week or ten days, and only received per rectum a few pints of water or normal saline solution, the injection which was daily used for washing out the bowel always contained some solid matter. Fr. Müller experimenting with men who took no food found that solid matter, which when dried weighed 3·818 grammes, was excreted by the bowel in 24 hours; and Kobert found that an average of 0·9684 gramme was excreted by the large intestine alone. The second difficulty was that there is no means whereby one can tell how effectual the cleansing enema is in removing from the bowel all that remains unabsorbed of the nutrient enemata; and consequently the determination of the proportion of the nourishment which has been absorbed by an analysis of what comes away in washing out the bowel is unsatisfactory and cannot be absolutely relied upon. But it seemed to be so important for medical men and patients alike that as accurate a judgment as possible should be formed as to the knowledge which we possess regarding this matter that I determined to offer you to-day the results of my reading and of my own personal experience on this method of feeding.

Every observant medical man knows perfectly well that it is absurd to doubt whether nutrient enemata have any effect upon patients: experience constantly shows how beneficial—nay, indispensable—they are. Everyone allows that water and a certain quantity of salts are absorbed, and many assert that the enema owes its virtues to these alone, while they deny that the other constituents of food—proteid, starches, sugars, and fats—can enter by way of the bowel into the circulation and so supply the body with nourishment. To show the extraordinary divergence in the views of various investigators on this matter I will quote a few. The literature of the subject is considerable and appears to be in the main French or German. Our countrymen have not contributed much to it.

Dujardin-Beaumetz said that the therapeutic value of nutrient enemata was illusory. Carl Voit and Bauer came to the conclusion that an animal cannot be satisfactorily fed by them: at best one quarter of the necessary albumin being absorbed. Francis Boyd and Jean Robertson say that even if a reduced standard of requirements be accepted only one quarter of the nourishment required to maintain equilibrium can be obtained by rectal feeding, and they conclude that rectal feeding, even in the most favourable circumstances, is subnutrition of a most pronounced kind. Michel denies the utility of injections and says that the relief of the discomforts they give is solely due to absorption of water and salts. The only exception he makes is in the case of alcohol, which is absorbed and acts as a stimulant and saver of metabolism. Marckwald, in the case of a woman with artificial anus in the colon, found that neither coagulated nor dissolved albumin, nor fat, nor starch are altered in the large intestine. As regards absorption, he found that albumin is not absorbed from the large bowel and that though a minute quantity of peptone may be formed and absorbed it is too small to be of serious value.

On the other hand, Leube used finely-chopped meat and finely-chopped pancreas and concluded that the large intestine can absorb abundant nitrogenous and fatty food when it is mixed with pancreas; that nearly the whole of the nitrogen which the enema contains is absorbed, and that the fæcal evacuations in such cases are in every way normal. He confirmed these conclusions on patients. Armin Huber's experiments showed abundant absorption by rectal feeding and he says that in egg emulsion with a little salt we possess an excellent enema. Henninger used peptonised meat and peptonised eggs and treated cases with much success. Daremberg using injections of peptonised meat, egg, and bread treated a case of impermeable stricture of the œsophagus. The patient lived 14 months, increasing slightly in weight, walking, writing, and passing from 15 to 20 grammes of urea daily. Brown-Séquard obtained similar results. Bial also says that no doubt any longer exists as to the value of rectal feeding. Robert Hutchison says: "Putting aside these rather academical discussions there is abundant clinical evidence of the feasibility of nourishing patients for some time, at least, by the rectum exclusively. In several cases cited by Gros patients were fed by this method alone for as long a period as three weeks with but very little loss of weight."

An experiment which one often hears quoted against the value of nutrient enemata is that of Carville and Bochefontaine. They took two dogs and gave them no food, but allowed them to drink water. To one of them they gave in addition a daily injection consisting of 200 grammes of bouillon. This dog died on the twenty-ninth day and the other on the twenty-eighth day—i.e., only one day earlier. But this proves nothing, for it is well known that bouillon contains only a trifling percentage of any substances which can be classed as foods.

It is generally agreed that the large intestine has little or no digestive power. Leube allows that the experiments of Eichhorst and others prove this. Albertoni and Marckwald's observations on a woman with an artificial anus in the colon showed that neither albumin nor fats are altered in the large bowel. Czerny and Latschenberger from similar investigations on a case of artificial anus conclude that the human large intestine and its secretions have no digestive action upon albumin or upon fat. Marckwald came to the same conclusion from his observations. But although no digestion may take place by means of juices elaborated by the large intestine, absorption is certainly one of its functions. In ordinary healthy people the contents of the small intestine pass into the colon in a fluid condition, and owing to the gradual absorption of water, at least, and no doubt of the relics of the food which has undergone digestion higher up as well, the contents of the colon gradually become solid. Clinically, too, we constantly find that pints of fluid which are injected in the 24 hours are taken up and disappear. There can, therefore, be no question as to the colon's capacity of absorbing water; and knowing the condition of the contents of the small intestine as they enter the large the presumption certainly is in favour of already digested foodstuffs being absorbed as well. Many authorities, however, have questioned whether attempts at rectal alimentation succeed in introducing any serious amount of nourishment into the organism.

Let us consider the question of proteids first. Seeing that the large intestine cannot digest them, it would seem probable that an enema ought to contain them in the condition of peptones if absorption is to occur. But the views of various investigators are by no means in agreement on this point. Ewald, for instance, claims to have

shown by his observations that eggs are quite as promptly absorbed as either meat-peptones or casein-peptones, and he says that peptonising the eggs is of no advantage. Voit and Bauer, on the other hand, concluded from their observations that egg albumin was absorbed to a very limited extent, and they agreed with those who do not believe in the value of injections of albumin unless they have previously been converted into peptones. Francis Boyd and Jean Robertson argue that proteid food, even when predigested, is very poorly absorbed in rectal feeding. Armin Huber, in his observations on man, got the following results as to the percentage of nitrogen absorbed from enemata. Using simply emulsified eggs he found that 36 per cent. was absorbed in one series of observations and 29·8 per cent. in another. Using emulsified eggs with common salt 70 per cent. was the amount of absorption in one series and 69·5 per cent. in another. Using peptonised eggs 76·6 and 74·78 per cent. were the respective amounts, and he says that in emulsified eggs with salt we have an excellent nutrient enema. Bial found in experiments on himself that from 50·5 per cent. to 66·01 per cent. of peptones were absorbed. Catillon in experiments both upon himself and animals showed that peptones could supply the place of albumin in food and that they had the same effects whether given by mouth or rectum. Brandenburg says that very little albumin is absorbed from milk, but 10 per cent. solutions of albuminoses are absorbed. He finally asserts that peptones are the best means of introducing nitrogenous foods per rectum. There appears, therefore, to be considerable doubt as to the absorption of albumins introduced into the lower bowel in an unaltered condition, while the evidence in favour of this occurring, even in considerable quantity, in the case of peptones is very strong.

The case for peptones is such as we might, as I have already said, expect it to prove, considering what occurs in the ordinary course of normal gastro-intestinal digestion and absorption, and it gains strong support from several investigators. Instead of introducing peptones into the lower bowel ready made the peptonising process may be carried out in the intestine itself. This has been arranged for by injecting mixtures of meat or other albumins with preparations of pancreas. For instance, Brown-Séquard gave two injections daily containing together from 400 to 500 grammes of meat and from 150 to 200 grammes of pancreas. In one case the patient continued eight days without loss of weight; in another five days; in another six days. In another case he nourished the patient efficiently for a month. He says that when the pancreas is quite fresh digestion is so complete that the solid fæces contain no trace of the injected substances.

Many varieties of peptones are now in the market and if as effectual as those prepared recently for injection they would prove a most convenient form for the purpose of rectal feeding. When prepared at the time different procedures are adopted by various observers. Leube used very finely chopped meat mixed with very finely chopped pancreas and injected this mixture into the bowel. For he says that peptonising nutrient substances previously to injection requires a constant temperature, which is difficult to get in ordinary practice. Enemata such as he made use of gave, he considered, most satisfactory results. Their composition was from 150 to 300 grammes of finely chopped meat; from 50 to 100 grammes of pancreas; and 150 cubic centimetres of water. He describes the fæces resulting from these injections as normal in appearance, in chemical constitution, and in odour; and when either man or dog was got into a condition of nitrogenous equilibrium this equilibrium was practically maintained when a large part of the day's nourishment was administered in this way. He also found that nearly the whole of the nitrogen contained in these enemata was absorbed from the intestine, as was shown by the analysis of the fæces. Fat amounting to one-sixth the quantity of meat might be added and this, too, was almost entirely absorbed. He says that his observations show that the large intestine can absorb abundant nitrogenous and fatty food when pancreas is added to the enemata. These results he confirmed at the bedside in the case of several patients. Mayet pounded up the pancreas of the ox in tepid water at about 37° C. and then expressed the pulp. He next mixed intimately the liquid so obtained with lean meat and with the yelk of egg, kept it at the same temperature two hours, and then injected it. Henninger made use of the following plan. 400 grammes of veal or beef without fat were cut up finely, and were then placed in two litres of water with 12 cubic centimetres of hydrochloric acid and two grammes of pepsine. The mixture was digested for 24 hours at a temperature of 45° C. and was then filtered and neutralised with carbonate of soda. The liquid was concentrated to one litre at a temperature of 100° C. and was then filtered again and kept in a well-corked bottle. He used the same procedure to peptonise the white of six eggs. These preparations could be made in any quantity that was desired and kept very well. He purposely avoided using pancreatine as he found that peptones formed by it rapidly decompose. He treated a patient who was reduced to extreme feebleness and emaciation by tuberculous disease of the larynx by giving daily an injection of meat, an injection of white of egg, and an injection of wine and water. The results he describes as follows: "Il renaissait véritablement à la vie, marchait, sortait au soleil, dormait paisiblement quatre ou cinque heures, n'avait ni délire ni algidité, rendait par les urines environ 17 grms. d'urée par jour au lieu de 9, et tout cela sans prendre un atome de substance par œsophage." The essential conditions for success he considered to be: (1) absolute neutralisation of the solution of peptone; and (2) preparing the intestine by small injections of laudanum.

There seems, then, to be no doubt that nitrogenous food is well absorbed by the large bowel if peptonised, and that whether the peptonising be done before the enema is given or in the intestine itself. In the latter case it is clear, however, that the necessary procedures are such as require considerable time and trouble, and are ill adapted to the conditions of medical practice. If, therefore, the various peptones which are on the market could be relied upon to give as satisfactory results it should lead to their constant employment at the bedside.

Peptones and albumoses have been shown by Reigel, Zuntz, Munk, Deiters, Pollitzer, and Kohlenberger to be capable of replacing albumin in the nutrition of the body and they are taken up by the large intestine and enter the organism and are not excreted unused by the kidneys as they are when injected into the blood. Eichorst's experiments are also in agreement with this. Bial submitted himself to experiments in which after he had fasted for a day he emptied the bowel by means of a dose of castor oil, followed by a thorough cleansing with water injected per rectum. 10 per cent. solutions of peptone were then administered in the form of an enema and it was found that 50·5 per cent. was absorbed. In another experiment 10 per cent. of alcohol was added to the 10 per cent. solution of peptone and it was found that the absorption of the peptone rose to 66·01 per cent. Leubuscher showed that alcohol in not too concentrated form (2 per cent.) and also 0·25 per cent. salt solution increased absorption of grape sugar in the bowel, while small doses of opium diminished it. But opium, on the other hand, limits peristalsis and so may favour retention of the enema. Therefore opium and alcohol together, he says, may sometimes be of service.

The experiments and results obtained by Ehrström on the value of casein as a nitrogenous constituent of enemata are very important. He says that casein is generally considered to be badly absorbed: Aldor found from 20 to 38 per cent., Brandenburg 40 per cent., and Ewald 68 per cent. Ehrström used "proton"—a powdered casein obtained from milk, which is light, snow-white, easily soluble in water, and without smell or taste. A patient of his who took nothing by the mouth was fed on enemata of milk, proton, and grape sugar: grape sugar, 50 grammes; warm milk, 150 grammes; and proton, 15 grammes. The absorption from this enema estimated by analysis of the patient's urine was found to be: nitrogen, from 82 to 86 per cent., and phosphorus, from 69 to 81 per cent. His conclusion is that enemata of milk and proton are exceedingly well assimilated by the organism and that by the addition of proton to milk one can by enemata introduce into the body comparatively large quantities of albumin and phosphorus. Several observers assert that the addition of a small quantity of salt to enemata leads to the absorption of albumins which are introduced in an unpeptonised condition into the bowel. Were this so it would be an easy way of solving the difficulty. Armin Huber gives the percentages of nitrogen absorbed as follows: (1) beaten eggs, from 29·8 to 36 per cent.; (2) beaten eggs + one gramme of salt per egg, from 69·5 to 70 per cent.; and (3) eggs the albumin of which has been peptonised from 74·78 to 76·6 per cent. Voit and Bauer considered that egg albumin as such was

absorbed to a very slight extent, but that when salt was added a considerable amount was absorbed, and Eichorst agrees with him. They arrive, however, at the conclusion that while ordinary egg albumin alone is absolutely useless, injections of it with salt added are not tolerated by the bowel but produce diarrhœa. Armin Huber denies this and says that one gramme of salt per egg never gives rise to irritation of the bowel. Ewald denies that salt is of any advantage, while Czerny and Latschenberger assert that it absolutely hinders absorption. It is clear that opinions differ very greatly as to the value of chloride of sodium as a constituent of nutrient enemata, and it would therefore be unwise to rely upon its rendering unpeptonised albumin capable of absorption. And even if it does do so, the percentage of nitrogen so absorbed is according to the results of Armin Huber's observations smaller than when peptones are used. With reference to the supposed absorption of albumin when salt is added to the enema Grützner made experiments in which he got some very curious results, and he concludes from them that the enema is carried upwards along the whole gastro-intestinal canal and is digested and absorbed by it and not by the large intestine only. He says that if a mixture of powdered animal charcoal and salt solution—0·6 per cent.—in equal proportions be made and injected per anum into an animal which has had no food for 24 hours, and if the animal be killed from four to six hours later, no charcoal will be found in the rectum, but it will be seen here and there the whole way upwards, even in the stomach. The same he found to occur in man with all sorts of fine particles if injected into the rectum; he was able to discover them in the contents of the stomach removed by the stomach pump. He introduced simultaneously finely-chopped black hairs into the rectum and white into the stomach, and found that the black travelled upwards and the white downwards. But hair or sand when injected in distilled water and not in normal saline solution did not travel upwards. The passage of solid particles upwards he explains by antiperistalsis, confined however to the mucous membrane alone, and he found that they travelled along the wall of the gut and not in the centre. He asserts that the reason why albumin is absorbed when salt is added, but is not absorbed when administered alone, is that salt causes antiperistalsis whereby the albumin is carried upwards and is digested and absorbed by the whole gastro-intestinal tract. Dauber repeated Grützner's experiments exactly in the case of six animals and got the same results; but in 11 others in which he took special precautions to prevent the possibility of their taking in any of the particles by the mouth his results were all negative. He finally comes to the conclusion that injections never reach the small intestine. Christomanos also got negative results. Schwiezinski, however, repeated Grützner's experiments taking the utmost precautions to avoid fallacy, and says that he got quite positive evidence that the lycopodium which he used was carried up to the stomach. The different results obtained by different experimenters must therefore leave us in uncertainty as to whether it is a fact or not that enemata may be carried upwards into the small intestine when a small proportion of salt is added to them.

Plantenga made a series of experiments of a most careful kind to test the truth of Grützner's assertions and found that it was not a fact that small particles such as lycopodium were carried up the alimentary canal when administered in enemata to which salt was added. But whatever be the means by which absorption takes place, and whatever be the extent of bowel surface over which this occurs, the evidence we possess shows that by means of peptones and probably of casein in certain pulverised conditions also a large amount of nitrogenous food can be supplied to the body by the use of nutrient enemata.

Fat.—With regard to the absorption of fat in rectal feeding opinions differ, though not to the same extent as in the case of albumin. Voit and Bauer came to the conclusion that very little fat was absorbed. Hermann Strauss, experimenting with olive oil and cod-liver oil, estimated the absorption at 10 per cent., and he quotes Stüve, Deucher, and others as getting similar results. Munk and Rosenstein made observations on a patient with a lymph fistula through which the chyle absorbed could be collected. In one case 3·7 per cent. and in another 5½ per cent. of the oil was absorbed. Kobert and Koch found that emulsified fat was slowly absorbed, but only to a very slight extent if not in the form of emulsion. Deucher made observations on men and women with reference to the absorption of fat in enemata, determining the amount that remained unabsorbed in the fæces. He used emulsions of pure olive oil in a 2 per cent. soda solution, both with and without the addition of common salt. The conclusion which he arrives at is that the absorption of fat in enemata takes place only to a very moderate extent, scarcely more than ten grammes a day, even under the most favourable conditions. It should be administered in the form of an emulsion at a temperature of from 38° to 40° C. in very moderate doses, with the addition of 6 per 1000 salt solution, and should be allowed to remain a long while in the intestine. Considering that he mentions 14, 20, and even 39 hours, one can hardly form a favourable view of the value of fat in rectal feeding. Robertson and Boyd got better results and believe that emulsified fat is a very useful ingredient in nutrient enemata, and is much better absorbed than is generally allowed. "If the physician desires to make use of rectal feeding, it seems," they say, "from our observations that the best results will be got from the carbohydrates and fat. The absorption of proteid food from the bowel is so small as to make it of little value as a food-stuff." They allow, however, that there is this great drawback—viz., the wide difference that exists as regards the absorption of fat in different cases. They consider that it is best administered in the form of yelk of egg. Leube, who advised enemata made from finely chopped pancreas and meat, says that if pancreas and fat be injected alone the soaps and fatty acids formed produce early evacuation of the bowels, and that the proceeding is therefore useless. If, however, to a meat and pancreas injection not more than one-sixth as much fat as meat be added the whole of the fat is absorbed, partly as fat, partly as soaps. Bial says that fat has been found to be absorbed but only in small quantities, at most ten grammes daily. Zehmisch in mixed enemata got an absorption of 5·8 per cent. of fat. If fat be, when emulsified, as Boyd and Robertson say, well absorbed one would expect that milk would be a very good vehicle for its administration. Yet Brandenburg says that very little fat or albumin is absorbed from milk and that the water and salts which it contains are responsible for any good results which follow its injection. And generally, as regards fat, he concludes that it is badly absorbed and not a desirable constituent of enemata. Zehmisch says that milk does more harm than good and that it interferes with the absorption of albumin. Boas considered that milk was almost entirely absorbed. It is clear, therefore, that there is much difference of opinion regarding the value of milk in rectal feeding.

As we have already observed, Leube's injections made from pancreas and meat or fat, though they may be efficacious, are not likely to come into wide use clinically, owing to the amount of preparation which they require. Judging from the opinions and results obtained by the other authorities quoted, the evidence, except in the case of Boyd and Robertson, is not favourable to the use of fat in injections. If it is used probably the best form in which to give it is yelk of eggs or milk.

Carbohydrates.—When we come to carbohydrates we find a favourable opinion as to their absorption almost universal. Some have asserted, however, that sugar is split up in the bowel by micro-organisms and so goes to waste. Boyd and Robertson made experiments with reference to this and found that this is true only for a negligible proportion of the sugar—viz., from 0·49 per cent. to 0·77 per cent. Another objection which has been made to the use of sugar is that it produces glycosuria and bowel irritation. But the last-named authors found that this was not the case, as did Reach. Bial says that stronger solutions than from 10 per cent. to 20 per cent. should not be used, but that with this proviso absorption is good. Zehmisch got absorption of 67·5 per cent. Deucher, giving 40 grammes of sugar in an enema, found that 77 per cent. was absorbed. Boyd and Robertson consider that pure dextrose is the best form in which to give carbohydrates and they obtained the following results:—

Grammes of sugar in enema.	Absorbed.	Caloric value.
47·75	43·8	179
38·0	38·0	155
61·85	61·85	253
57·12	50·61	207
88·14	81·1	332
39·08	36·96	151

Hermann Strauss finds that grape and milk sugar given per

rectum in from 10 to 20 per cent. solutions up to 100 grammes produce no glycosuria, and that such enemata are tolerated for a long time, even for weeks, without producing irritation of the bowel. Grape sugar, he remarks, is greatly to be recommended in rectal feeding; and if the stools have an unusually sour smell during its administration, this may be corrected by adding from ½ to ½ per 1000 of thymol or menthol. Reach made experiments by which he proved the absorption of sugar from enemata by estimating the alteration they produced in the respiratory quotient.

It seems clear that experiments prove that grape sugar, if pure, is a most important ingredient in nutrient enemata, and that it is freely absorbed from the large bowel.

As regards *starch*, it matters but little whether or not it is converted into sugar when injected, inasmuch as there is no need to give it. It might, however, be useful sometimes to increase the consistence of nutrient enemata, and by this means lead to their being better retained. Upon the question whether it is or is not converted into sugar in the bowel opinions differ. Voit and Bauer found that a very large proportion of it is so converted and absorbed. Leube agreed with this, but said that the addition of starch to enemata led to their evacuation per rectum. Marckwald came to the conclusion that starch was not converted into sugar in the large intestine. But, as has already been observed, the matter is of little importance in questions relating to rectal alimentation.

Salts and mineral substances are generally allowed to be well absorbed. Zehmisch found that in mixed enemata 31·5 per cent. of the salts were absorbed. Brandenburg says that common salt in 1 per cent. solution is very well taken up. Ehrström found that phosphorus in combination in casein was absorbed in quantities varying from 69 per cent. to 81 per cent. Of course, in using any saline solutions care must be taken that the concentration is not so great as to cause irritation and evacuation of the bowels.

Alcohol is also well absorbed in solutions of from 0·5 to 2 per cent., according to Brandenburg.

When we come finally to criticise the various facts and opinions which have been quoted I think we are justified in saying that it is proved that a considerable amount of nourishment can be introduced into the body by rectal injections. Water is taken up in abundance and salts, sugar, and alcohol too. If this were all that could be said it is clear that nutrient enemata would be of great value in the treatment of disease. But the evidence also shows that nitrogenous substances in the shape of peptones and pulverised casein are also well absorbed. In other words, the principal constituents of our food—water, salts, proteids, and carbohydrates—can be introduced into the circulation per rectum and so be made to supply the nutritional needs of the organism. As regards fat there is some uncertainty, but probably very little is absorbed. If given, yelk of egg and milk are probably the best forms in which to give it.

A good deal of obscurity and misapprehension has been introduced into the discussion as to the value of rectal alimentation by not clearly distinguishing the clinical side of the matter from the physiological and experimental side. One reads far too much in the various papers written upon the subject as to the impossibility of *completely* nourishing patients by means of these injections, of the impossibility of keeping up the nutritional equilibrium by this means. Inasmuch as this is probably in the main true, and is laid stress upon by the experimentalists as the result of their investigations, many have hastily concluded that rectal alimentation is of little or no value clinically. But it may be boldly stated that there is no great advantage in keeping patients at their normal weight, even if it were possible to do so; at any rate, in the case of such patients as are usually treated by nutrient enemata it is quite unnecessary. There must be very few cases in which the loss of a certain, even though considerable, amount of weight is of serious consequence, provided that it is a temporary loss only. When we have recourse to rectal feeding it is only as a temporary measure, at any rate in the great majority of cases. Before the modern developments in surgery one could not, perhaps, have made this assertion. In many diseases such as stricture of the pylorus or of the œsophagus the patients would formerly have had to depend upon nutrient enemata for the prolongation of their lives. But such is no longer the case, as gastrostomy in the case of œsophageal obstruction, and gastro-enterostomy or some other operation to suit the particular case of pyloric disease would be the best treatment. The advances of surgery have removed a large number of cases from the category of those for whom rectal alimentation is essential over long periods of time, and its main application nowadays is to cases such as ulcers high up in the digestive tract, which if left unirritated by the passage of food for ten days or so will heal satisfactorily. To be able *completely* to nourish such patients and keep them from losing weight is a matter of no serious importance. Indeed, it is quite possible that not to attempt to do so may be to the advantage of the patient suffering from hæmorrhage, as a reduction of the vigour of the circulation is an important factor in the healing of the bleeding vessel. If the amount of nourishment which can be absorbed per rectum in 24 hours is, though considerable, much less than the individual in health would require to retain nutritional equilibrium, his necessities are very greatly diminished when he exchanges his active life for a passive one in bed. It is, moreover, notorious that people take a great deal more food as a rule than is necessary. Chittenden says: "Carl Voit of Munich considered that an adult man of average body weight (70–75 kilogrammes) doing moderate muscular work requires daily 118 grammes of proteid or albuminous food, of which 105 grammes should be absorbable, 56 grammes of fat, and 500 grammes of carbohydrate, with a total fuel value of over 3000 large calories, in order to maintain the body in equilibrium. The Voit standard of daily diet is accepted more or less generally as representing the needs of the body under normal conditions of life, and the conclusions arrived at by other investigators along these same lines have been more or less in accord with Voit's figures." Sivén, however, from his investigations and experiments published in 1900 in the Scandinavian Archives of Physiology, is not in agreement with the dicta of Voit, but considers that far less than 118 grammes of proteid is sufficient. Hirschfeld and Kumagawa's experiments also go to prove that this is true. Chittenden carried on a very complete investigation extending continuously over many months with reference to this question, his experiments being made upon professional men, upon volunteers from the Hospital Corps of the United States army, and upon university students trained in athletics. His results were alike in all three classes. "Careful consideration of the foregoing data," he writes, "taken in their entirety, must lead the unbiased thinker to admit the possibility of physiological economy in nutrition. That there is no real need for a daily diet containing 118 grammes of proteid food seems clearly indicated. The members of the soldier detachment lived without discomfort for a period of five months on amounts of proteid food not more than one-half that called for by the ordinary standard dietaries, and this without increasing the amount of non-nitrogenous food. Body-weight, nitrogen equilibrium, physical strength and vigour, ability to respond to sensory stimulation, the composition and general condition of the blood, all remained unimpaired under a daily diet involving the metabolism of only seven to eight grammes of nitrogen per day and with a fuel value of less than 2800 calories per day." Summing up his results in the case of the University athletes he says: "It is quite evident from a study of the results obtained in the foregoing experiments that young vigorous men of the type under observation, trained in athletics, accustomed to the doing of vigorous muscular work, can satisfy all the true physiological needs of their bodies and maintain their physical strength and vigour, as well as their capacity for mental work, with an amount of proteid food equal to one-half or one-third that ordinarily consumed by men of this stamp. As the results show all these men reduced their rate of proteid metabolism in such degree that the amount of nitrogen excreted daily during the period of the experiment averaged 8·8 grammes, implying a metabolism of about 53 grammes of proteid matter per day." This being so as regards people leading active lives physically and mentally, the amount of proteid required by patients lying in bed inert must be comparatively small, and it is just this food-stuff which we find the greatest difficulty in supplying the body with by rectal feeding. It is a fortunate circumstance that experiments such as Chittenden has carried out should show that the amount supplied need not be nearly so large as has hitherto been supposed. While, therefore, we cannot look upon rectal feeding as a satisfactory means of replacing gastro-intestinal digestion over long periods of time, we can nevertheless by means of it meet those emergencies which occur in medical practice, where it is necessary for a while

to give absolute rest to the upper portions of the alimentary canal.

The largest and most important class of cases in which the physician has to make use of rectal alimentation is that of simple ulcer of the stomach. The disease is a very common one and a very large proportion of the cases recover when carefully treated. When the case is severe and much vomiting or hæmorrhage occurs rectal alimentation should be had recourse to—indeed, it is perhaps best to commence with it in all cases, the patient being meanwhile confined to bed. It is well known that animals live a long time without food if supplied with water. The question therefore naturally arises, might we not treat gastric ulcer by giving perfect rest to the stomach, supplying the necessary water per rectum? My attention was first called to this question by a paper by Dr. W. Pasteur in THE LANCET.[1] He recommends the treatment of all cases of gastric ulcer requiring rectal feeding by enemata of plain water at the temperature of the body. He gave ten-ounce injections at a temperature of 100° F. every four or six hours. "I am quite satisfied," he says, "that the general condition of the patients is at least as good, if not better, and that recovery takes place as quickly, and I may add that since I first adopted this treatment in November, 1902, I have not once had occasion to order a nutrient enema, and have not once met with an untoward symptom in any of my cases." "In most cases it is possible to supplement the enemata by giving small quantities of peptonised milk by the mouth before the end of a week, but in several instances my patients have had nothing whatever by the mouth for ten days or a fortnight, and in one or two cases for nearly three weeks, without making any complaint or giving any indication that they were any the worse for their prolonged abstinence. To sum up, the method here advocated gives results at least as good as the ordinary nutrient enemata. It is far simpler to carry out, it is decidedly more bearable for the patient, and incidentally it does away with the unpleasant and offensive daily wash out." I tried this method and have since continued to give only normal saline solution or water per rectum to patients suffering from gastric or duodenal ulcer, at any rate, for the first seven or ten days. Many patients are quite comfortable under this treatment and suffer but little from hunger or thirst, and their pulse remains steady and satisfactory. In some instances I have continued it for 14 or more days, but I think that it is unwise and generally unnecessary to go on so long. But, it may be asked, why not give nutrient enemata? Is it not better to give some food than none? What is the advantage of giving only water or normal saline solution? I have given some attention to this question and have asked the "sister" of my female ward, who has had a very large experience in such cases, what her opinion is as to the two methods from a nursing point of view. She tells me that the advantages of saline or water injections over ordinary nutrient enemata appear to her to be: (1) there is much less thirst; (2) the patient is not worried by so many injections; (3) as a rule no nasty taste occurs in the mouth and it remains much moister and more comfortable; (4) there is not so much craving for food; and (5) the nursing of the patients is much more cleanly in every respect. Moreover, Umber found that in a case of gastrostomy gastric juice was secreted whenever a nutrient enema was given. This acid juice being poured over an unhealed ulcer would hardly assist the healing process. I believe, therefore, that for these reasons the injection of normal saline solution or water alone is the best method of rectal alimentation in cases of gastric or duodenal ulcers, at any rate for some days. I generally order three-quarters of a pint four times in the 24 hours or sometimes a pint. Where hæmorrhage has occurred one should be careful not to give more than three-quarters of a pint at a time, as I believe I have seen bleeding return after larger quantities have been used, probably owing to the consequent distension of vessels.

But if it be preferred to make use of nutrient enemata from the first, or if after the saline solution or water has been injected for ten days or so and one still cannot feed by the mouth, the question remains as to what kind of foodstuffs it is best to use, in what quantities, and how frequently.

It has already been shown that by general consent pure grape sugar is, next to water, the substance which is most freely absorbed. Moreover, it is a very important foodstuff and therefore a very desirable constituent of enemata. As large quantities of it produce irritation of the bowel, how much is it safe to give? Ewald says solutions containing 20 per cent. Hermann Strauss says that solutions of from 10 to 20 per cent. up to 100 grammes produce no glycosuria and can be tolerated for a long time without producing irritation. Bial and Zehmisch agree that a concentration of from 10 to 20 per cent. should not be exceeded. Grape sugar, therefore, if pure, may be given in such proportions and the actual amount given will depend upon the size of the enema administered. Alcohol also is freely absorbed and may be given according to Brandenburg in from 0·5 to 2 per cent. or even, according to Bial, in 10 per cent. solution. As regards proteids, it has already been pointed out that peptones and casein in powder (sanatogen, plasmon, or proton, for example) seem to be the forms in which they are best absorbed. Brandenburg considers 10 per cent. the amount of peptones which should be given in enemata, and casein may be used in like proportion. Robert Hutchison says that raw beef juice is very completely absorbed, but albuminoids such as gelatin are not absorbed. But he also says that raw beef juice contains coagulable proteids in no greater quantity than from 2 to 7 per cent. Sanatogen, which contains 95 per cent. of casein with 5 per cent. of glycerophosphate of soda, Hoppe found to be absorbed to the extent of 77 per cent. Somatose Hutchison considers the best solid preparation of peptones. It is prepared from meat, is a greyish powder, readily soluble in water, and practically devoid of taste and odour. Bial found that of an enema containing 10 per cent. of peptone 50 per cent. was absorbed, but that by the addition of 10 per cent. of alcohol the absorption rose to 66 per cent. Many continental writers recommend alcohol in the form of red wine. O. Grünbaum found that ox serum was well absorbed and he gave 90 cubic centimetres every four hours. But it is not a thing which is always at hand and therefore hardly adapted to clinical practice.

Although, as has previously been stated, opinions differ as to the value of salt where albumins are used in nutrient enemata, there seems to be good reason to think that it increases very considerably the absorption of peptones, and therefore it should be added when they are made use of. Plantenga made a series of experiments on a dog with regard to this point and obtained the following results:—

Of a 17%	somatose	solution	without	salt	13·4%	was absorbed.
" "	"	"	with	"	19·7%	"
" 15%	"	"	without	"	10·8%	"
" "	"	"	with	"	14·1%	"
" 12%	"	"	without	"	12·2%	"
" "	"	"	with	"	16·5%	"

As to the total bulk of each enema Ewald considers that 250 cubic centimetres is the quantity that should be given, and most authors estimate it at from 200 to 300 cubic centimetres. The larger the quantity the less frequently it has to be given, but the smaller the quantity the more likely is the enema to be retained. Personally I think from 150 to 200 cubic centimetres the safer quantity and I rarely give more. As regards the frequency with which it is desirable to give such injections, I think every six, or at most every four, hours is best, and in addition every 24 hours from three-quarters to one pint of water should be injected for cleansing purposes. Brandenburg suggests the following enema: dry peptone, 20 grammes; grape sugar, 20 grammes; salt, 1 gramme; and water, 200 cubic centimetres. As he rightly remarks, the conditions which one should aim at fulfilling in respect to these enemata are: (1) that they shall be of such a kind that no irritation of the bowel occurs even if they are continued for weeks; (2) that they shall remain in the bowel a long time without being evacuated; and (3) that the largest possible portion of them shall be absorbed. Casein may in one of the forms already mentioned take the place of peptone, and the same quantity may be used, and alcohol may be added up to 10 per cent. There is some doubt as to the absorption of fat, but the addition of yelk of egg may be tried, or perhaps the enema may be made with milk instead of water.

The objections to enemata formed from meat and fresh pancreas have already been stated, but according to Leube they are extremely well absorbed; indeed, he speaks very enthusiastically of them. The fæcal evacuations after the use of them are, according to him, normal to the naked eye and chemically and in odour too; and nearly the whole of the nitrogen is absorbed from them. The composition he suggests is: from 150 to 300 grammes of finely chopped

[1] THE LANCET, May 21st, 1904, p. 1418.

meat; from 50 to 100 grammes of pancreas; and from 150 cubic centimetres of water. To this may be added not more than one-sixth as much fat as there is meat, and then, he says, almost the whole of the fat is absorbed. Mayet pounds up in a mortar with tepid water the pancreas of the ox at about 37° C. and then expresses the juice, which he mixes with finely chopped meat instead of using the pancreas itself. Or Henninger's method may be adopted: cut up 400 grammes of veal or beef finely, removing fat. Place it in two litres of water, and add 12 cubic centimetres of pure hydrochloric acid and two grammes of pepsine. Digest for 24 hours at a temperature of 43° C. Filter and neutralise with carbonate of soda. Concentrate the liquor down to one litre at a temperature of 100°. Filter again and place in a well-corked bottle. As much as may be desired may be prepared for use as it keeps well. The objections to these methods of preparing nutrient enemata, however satisfactory the results may be, are the time and trouble they require, and for this reason it is very unlikely that they will come into frequent use. The advantage of the peptone, casein, and sugar enemata is the ease with which they are prepared and the small extent to which fœtor occurs from their decomposition within the bowel. Nutrient enemata should be administered slowly by means of a funnel and long tube, and the nozzle of the tube should be introduced well up into the bowel.

Personally I have found considerable difficulty in securing conditions which would allow me to draw reliable conclusions from the analysis of what is returned when the bowel is washed out after enemata have been given during the previous 24 hours. The analyses which Dr. Le Sueur made for me were in the cases of patients who had had nothing but water or normal saline per rectum and nothing by the mouth for from seven to ten days, so that one ought to have been able to rely upon the bowel being empty. The cases were few in number, but I give some of the results obtained from them. 400 cubic centimetres of milk were administered per rectum in 24 hours. This quantity contained: total solids, 50·7 grammes; inorganic constituents, 3 grammes; nitrogen, 2·1 grammes (= 13 grammes of proteid); and fat, 14·9 grammes. The washings from the bowel at the end of 24 hours measured 700 cubic centimetres which contained: total solids, 27·8 grammes; inorganic constituents, 2·0 grammes; nitrogen, 1·0 gramme (= 6·33 grammes of proteid); and fat, 7·1 grammes. The total solids absorbed were 22·9 grammes (= 45·1 per cent.); proteids absorbed, 6·97 grammes (= 52·4 per cent.); and fat absorbed, 7·8 grammes (= 52·3 per cent.). In another case fluid nutrient enemata were given and also three suppositories. The total solids dried at from 100° to 105° C. given in the form of injections in 24 hours were 47·9 grammes. The total solids dried at from 100° to 105° C. given in the form of suppositories were 7·5 grammes, making a total of 55·4 grammes. In the washings of the bowel after 24 hours 25·7 grammes were recovered. The total solids absorbed were 29·7 (= 53·6 per cent.). In another case in which 34·36 grammes of anhydrous grape sugar were injected in enemata 7·46 grammes were recovered on washing out the bowel, so that 25·9 grammes were absorbed (= 78·2 per cent.). In another case 40 grammes of somatose and 40 grammes of sanatogen were given in enemata in 24 hours. When dried at 100° C. they weighed together 68·46 grammes. 17·4 grammes were recovered on washing out the bowel. 51·06 grammes therefore were absorbed (= 74·5 per cent.). In another case injections were given of the same amounts of sanatogen and somatose with the addition of half an ounce of brandy. The total solids (dried at 100° C.) were 68·46 grammes. 16·52 grammes were recovered from the bowel. 51·94 grammes therefore were absorbed (= 75·8 per cent.). Edsall and Miller made similar investigations in the case of two patients. They gave three enemata a day of milk and eggs, pre-digested with pancreatin, adding to each enema three drops of laudanum and enough salt to give the percentage of normal saline solution. The total amount given in 24 hours was 400 cubic centimetres of milk and six eggs. In the first case the nitrogen absorbed amounted to 39·88 per cent., while the amount of fat absorbed was 13·61 per cent. In the second case the nitrogen absorbed was 47·5 per cent. and the fat absorbed was 33·46 per cent. The patients were fed thus for 18 days. In the cases which I have treated with nutrient enemata, giving, say, two or three in the 24 hours, each consisting of from 150 to 200 cubic centimetres of fluid, I give ordinary water enemata at intervals between the nutrient ones to make up the total fluid to about three pints or 1700 cubic centimetres.

When one compares the percentage of absorption from such mixed enemata as those given by Edsall and Miller and myself, with the percentage obtained in the case of enemata of grape sugar, somatose, and sanatogen, the results of the latter are very much better and tend, as far as they go, to confirm the conclusions I have arrived at that sugar, peptones, and pulverised casein are the best constituents for use in rectal alimentation.

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An Address

ON

ADOLESCENT OR LATE RICKETS.

Delivered before the Clinical Society of London on Oct. 12th, 1906,

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PRESIDENT OF THE SOCIETY.

(With Illustrative Plate.)

GENTLEMEN,—I beg to welcome you to this society for another session and hope that much pleasure and profit may accrue to those who take part in our deliberations. I cannot help wishing that more men would come and discuss the cases that are presented to the society, for I feel confident that in attempting to correct others in their errors we end in correcting ourselves. It is very curious to notice the number of members who come to see patients on the clinical evenings and how few of them remain to ask questions of, or to criticise the opinions of, the exhibitors. Is it possible that in the hurry of work men no longer wish to discuss their cases? I should be sorry to think that they have lost interest in clinical medicine and surgery, for there must always be two sides, if not more, in every question of difficult

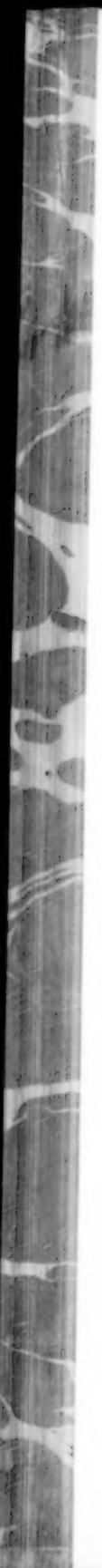
FIG. I.

FIG. II.

FIG. III.

FIG. IV.

TO ILLUSTRATE MR. H. H. CLUTTON'S PAPER ON ADOLESCENT RICKETS.



diagnosis. It is customary, as you know, for the President when elected for a second year of office to give an address. First, let me thank you for giving me the opportunity of assisting to make our meetings successful. Secondly, forgive me for having taken the liberty of somewhat departing from orthodox lines by starting a discussion instead of giving an address on general principles. However, I hope the subject which I have chosen will be interesting to physicians and surgeons alike.

Attention was first called in England to the subject of late or adolescent rickets by Dr. F. G. D. Drewitt, who showed a boy, aged 10 years, at the Pathological Society of London in November, 1880. The boy, who was under the care of Dr. W. B. Cheadle at the Children's Hospital, died two years afterwards, and the post-mortem examination, made by Sir Thomas Barlow and Dr. John Abercrombie, showed that the disease was undoubtedly one of true rickets. A few cases have been recorded since then but in some of them a confusion seems to have arisen in the diagnosis between rickets and osteomalacia. I do not wish to argue about any individual case previously recorded, but rather to proceed with those which I have in hand. It is of some importance that we should be able to assert without fear of contradiction that rickets may appear during the adolescent period of life, for it is not so long ago since this possibility was either ignored or denied. The importance of being able to ascribe a certain proportion of bony deformities that are seen in adult life to their true cause will be obvious to us all. I am not now wishing to assert that such and such cases of adult deformity are due to adolescent rickets but rather to show what rickets can produce in the way of deformity during the adolescent period of life, and, if unrelieved, the possible deformity in the adult skeleton when all signs of the original cause—namely, rickets—have disappeared. The majority of the cases of coxa vara, genu valgum and allied cases, which are ordinarily put down to static deformity of adolescence, are in reality due to the same kind of imperfect ossification which occurs in rickets. But very few indeed show the same condition at the epiphyseal lines which is seen in infantile rickets. Hence they are not usually ascribed definitely to this disease. I imagine the difference is only one of degree. The faulty metabolism which in its milder form may produce a soft bone, which yields to the weight of the body, may in a more severe degree result in a greater and more permanent change in the bony framework of the body. In the former case the bones are not sufficiently ossified and yield such deformities as coxa vara, genu valgum, and bow legs, but the epiphyseal lines do not show the proliferation of unossified cartilage which we recognise as characteristic of rickets. When, however, the epiphyses do show this condition there is little or no difficulty in stating that the case is one of rickets, and as a result we may expect to find not only the same deformities already mentioned, but also, after a prolonged continuance of the same condition at the epiphyseal lines, some of the extraordinary deformities seen in adult life. The object of this paper therefore is to show that all the ordinary signs of infantile rickets, so far as regards the bones, may exist in the adolescent period of life, and that they may continue for many years. The history of the patient may prove either that rickets did not exist in childhood, or, assuming the history in some cases to be imperfect, that rickets must be said in the latter event to have continued from infancy to adult life, or to have been in abeyance for a time and to have reappeared at the age of puberty, for in the case I am recording at the age of 21 years we have, I think, positive evidence of the exact condition of the bones by means of x rays. It was not possible before the discovery of these rays—except in the rare occasion of a post-mortem examination—to prove the presence of active rickets in the epiphyses. Consequently the case I first recorded under the name of late rickets in 1884 lacked the confirmation I have been able to obtain in the present cases.

CASE 1.—The patient was sent to me by Mr. A. C. Robinson and was admitted into St. Thomas's Hospital under my care in February, 1904. The history taken by my dresser, Mr. J. H. D. Acland, was as follows: The patient, aged 21 years, was of Italian parentage on his father's side, and the second child of a family of five, none of whom were the subject of rickets in infancy. Dentition was not delayed and he began to walk at the usual time. There was no enlargement or curvature of the long bones during childhood. Between the ages of 11 and 12 years the patient was first noticed by his parents to walk badly. He was at that time taken to one of the orthopædic hospitals, where he was ordered steel supports for genu valgum of both limbs. These he wore for two years without any apparent improvement. He was then taken to Guy's Hospital—about five years ago at the age of 16 years—where osteotomy of both femora was performed by Mr. J. N. C. Davies-Colley, and plaster-of-Paris was applied for three months. After this treatment the lower limbs were quite straight and remained so for three years—i.e., till two years ago. At this time, at the age of 19 years, the left femur was noticed to be bending again and an "iron" was ordered which seemed to correct the deformity. About nine months ago, at the age of 20 years, the legs began to drop backwards at the knees. The right leg, which had no support, rapidly showed the greater deformity. His parents were not poor people so that he had always been well fed. There is one point in his history which should be mentioned here, as it illustrates one of the possible contributory causes for this trouble. His school life had been a hard one. He had had to walk three miles from his home to school and three miles back. He had worked at night till 11 o'clock and had gained a scholarship by examination as a result. He left school at 16 years of age, and became a clerk in the City, working at a desk from 10 A.M. to 6 or 8 P.M. His young life had therefore been a strenuous one.

At present (February, 1904) the patient is a feeble-looking, narrow-chested youth without hair on his face, looking much younger than his age of 21 years. His occupation is that of a clerk in an office, where he is able to do an ordinary day's work. His weight is 6 stones 5½ pounds and his height 5 feet 4 inch.

In looking at Fig. 1 it will be noticed that all the epiphyses appear to be larger than normal. But the most striking feature in the anatomy of the patient is the deformity at the knees, which appear at first sight to have undergone some displacement at the joints or at the epiphyses. The radiographs taken by Dr. A. H. Greg at St. Thomas's Hospital show most distinctly that the deformity is due to an antero-posterior curvature of which the articulation is the centre and that the bending has taken place in each bone on the diaphyseal side of the epiphyses. In Fig. 2 the combined curvatures of the femora and tibiæ give one the general impression of genu recurvatum in both lower extremities. In looking for an explanation of these curvatures it will be seen that the radiograph shows an imperfect ossification of the shafts of both femora and tibiæ. The ends of their diaphyses adjoining the epiphyses are large and bulbous, but they have only a thin shell of bone. The epiphyses themselves are not far removed from the normal condition for the age of the patient, except that the line is more distinct than it should be. Much the same condition is seen in the upper end of the left humerus, which is probably curved from muscular action. Indeed at one spot—the apex of the curve—the cortical bone appears to be absent. There is no marked proliferation at the epiphyseal lines such as you would expect to see in the acute stage of active rickets. They would rather give one the impression of the acute stage having passed away leaving behind a very feeble diaphysis at that part which immediately adjoins the epiphysis. In confirmation of this view of the case we have only to turn to the radiographs of the wrists (Fig. 3) when we see that the epiphyses of both the long bones are in exactly the same condition as are those of young children who are the victims of active rickets. There is marked proliferation of imperfect bone with very considerable enlargement at the epiphyseal line, and the adjoining diaphysis is feeble but has no marked swelling as is seen in the femur. The bones of the forearms have not become curved as they have not been forced to carry weight as in the case of the lower extremities. The skull shows no changes probably because ossification was complete before the onset of the disease. Coxa vara does not exist possibly for the same reason. The curvatures of the femora and tibiæ, which are so close to the epiphyseal lines, suggest that imperfect ossification has been going on for some years. The result of such feeble ossification is shown in the skiagrams by the hollow shaft in the part immediately adjoining the epiphysis and by the fact that this is the part which has yielded to the weight of the body and produced a well-marked curvature. In the case of the left humerus the curvature is a little further removed from the epiphyseal line. The disease in the wrists appears, on the other hand, to be more recent and to be still in the active stage, and without such evidence as they give one might possibly doubt whether after all the curvature at the knees and

shoulder was due to rickets. These beautiful skiagrams by Dr. Greg, to whom I am so much indebted, were taken in 1904, and he has been good enough to repeat the whole series in 1906. There is not much change in the bones at the knees except that ossification is a little more complete, but at the wrists it is interesting to see a distinct improvement as regards the rachitic invasion of the diaphyses.

In a similar case which I recorded in Vol. XIV. of St. Thomas's Hospital Reports, 1884, the same sequence of events took place. There was a complete absence of any history of deformity or enlargement of bone-ends in early childhood, but just before the onset of puberty the wrists were for the first time noticed to be enlarged. This girl was lost sight of at the age of 14 years, so that I am unable to report the condition of her bones at the age of 20 years. There were already some slight curvatures of the long bones in the lower extremities at the age of 12 years, but I cannot say that they assumed the proportions later as in the case now recorded. In 1884 we had no means, such as now exist by x rays, of knowing the exact structure of the bones.

In the present case the normal process of ossification appears to have commenced to go wrong at about the same age. Deterioration advanced still further from imperfect metabolism, continued for some years, till finally the bones were not strong enough to carry the weight of the body. This appears to have reached its climax between the ages of 19 and 21 years, and the same imperfect structure exists at the present time when the patient's age is 23 years. But the bones are not all in the same condition. In some of them, as, for example, at the wrists, the epiphyses of the radius and ulna showed signs of active rickets in 1904 which could scarcely be the case if the disease had been arrested. It is difficult to believe, even apart from the history, that these wrists can have been in this condition from infancy. And now in 1906 they show some signs of recovery. In the shoulder and in the lower extremities, the shafts of the long bones show less bone than usual within an attenuated cortex (Fig. 4). This is especially the case at the parts nearest the epiphyses which have yielded to pressure. The epiphyses themselves, on the other hand, do not show any proliferation of imperfect bone such as that seen in the radius and ulna. The present condition of these bones of the shoulder and lower extremities indicates that recovery is taking place and that the damage done to the diaphyses has been continuous in action over many years. The contrast in this respect between some of the bones of the upper and lower extremities is very marked and confirms, I think, the impression of the persistent character of this particular case of adolescent rickets.

Another feature of some importance should be noticed: none of these bones show any indication of sclerosis even in those in which there is some evidence of a tendency towards recovery, nor are there any buttresses of bone thrown out on the concavity of the curvatures. In infantile rickets, on the other hand, the bones as a general rule show marked sclerotic changes after a few years, especially towards the period when recovery is taking place. Those of us who have done much osteotomy will remember the great difference there is in trying to drive a chisel or saw through the bones of different cases of rickety deformities.

An analysis of the urine that was passed during 24 hours was made by Dr. A. W. Crossley, consulting chemist to the hospital, on Feb. 22nd, 1904. The total amount of urine was 495 cubic centimetres. It did not contain albuminoses. Its specific gravity was 1027; calcium as CaO, 0·0640 gramme; and phosphoric acid P_2O_5, 0·9595 gramme. The average of calcium should be 0·30000, and phosphoric acid 2·5 grammes. It will thus be seen that the calcium and phosphoric acid were below the normal amount. This is what one might expect in this stage of the disease, where the changes in the bone have already taken place.

CASE 2.—In January, 1906, my attention was kindly called by Dr. W. S. Colman to another case which serves as a very useful contrast to that of the patient whom I have just described. Dr. Colman's patient was a girl, aged 13 years, living in Lambeth, whose history may be given as follows. She was the fourth child in a family of eight and was breast-fed for the first 15 months of her infant life and for the following nine months was generally in bed with measles, bronchitis, and whooping-cough. During this time she was constantly sick and took no solid food. She may therefore be said to have had every inducement to fall a victim to infantile rickets. But so far as the history can be relied upon there were no enlargements of bone-ends or curvatures of limbs. Nor were there any other indications of rickets except the fact of being ill till two years of age. After this period she recovered her health and seemed like other children. In November, 1905, when she was 13 years of age, her mother first noticed that her ankles were swollen and in December that her knees had a peculiar shape. She was also at this time restless, irritable, and subject to profuse sweats at night. She was brought to the hospital in January, 1906, as her joints were getting worse and walking was painful. In appearance she was a healthy-looking child who showed no indication of having been infected by infantile or hereditary syphilis and she had no albumin in her urine. With regard to hereditary syphilis, although the one existing central incisor looked at first sight suspicious, it could not be considered typical. Mr. J. H. Fisher, ophthalmic surgeon to the hospital, found no evidence of hereditary syphilis on careful examination of the eyes. On examination of the limbs she was found to have all the ordinary signs of rickets such as you expect to see in infancy. All the long bones of the lower extremities showed some degree of irregularity and enlargement at the epiphyseal ends. Knock-knee was a conspicuous deformity and there was a slight curvature just above each ankle. These deformities did not involve the shafts in any way but were entirely confined to the ends of the bones. The upper extremities, with the exception of the clavicles, had no curvatures of any kind, whilst the epiphyses and the adjoining parts of the shafts were distinctly enlarged. The sternal ends of the clavicles were swollen and the natural curves were increased. The absence of curvature in the forearms, whether in the shafts or at the epiphyses, is in accordance with the generally accepted view that in infancy this occurs from crawling on the floor. In adolescence, therefore, one would not expect to see such a deformity. On careful examination of the skiagrams it will be seen that the disease is most marked on the diaphyseal side of the epiphyses, that the swelling is due to a proliferation of imperfect bone at the expense of the diaphysis, and that the deviation from the straight line in the lower limbs is really the result of the want of support on the side of the epiphysis most affected. If the skiagrams of this—the younger—patient are compared with those of the older one just recorded it will be seen that the shafts of the long bones in the younger patient, aged 13 years, are of normal density for this age, and are not curved, but that the deformity is confined to the junction of the epiphysis with the diaphysis. This is best seen at the ankle where at first sight there would appear to be a curvature above the malleolar arch of the tibia, but the x rays show that this apparent curve is really due to a want of true bone on the inner side of the diaphysis. The skiagrams of the older patient, aged 21 years, show a large hollow and curved bone for some inches above the epiphyseal line. This is what one would expect if, as I am suggesting, this form of rickets arises about the age of puberty. Bone already formed would not, I imagine, be altered by this disease. In the younger subject, therefore, the shaft itself would be nearly or quite normal, whilst in the older patient, in whom the disease had existed for from seven to nine years, and who has well-marked evidences still existing at the wrists, the shaft of the long bones would be considerably altered from the prolonged imperfect ossification at the epiphyseal lines, and would thereby be liable to bend from the weight of the body. It seems also as if the presence of the disease prevents the fusion which would otherwise take place between the epiphysis and the shaft. For there is still a wide gap at the epiphyseal line in some of these bones, even in those in which there is no proliferation of unossified bone, where there should be only a faint line at the age of 20 years.

CASE 3.—This case was kindly reported to me by Mr. C. A. R. Nitch, resident assistant surgeon to St. Thomas's Hospital. The patient, aged 12 years, was an only child. As an infant she was bottle-fed, as her mother died soon after her birth. There were no signs of rickets in infancy and her health was good. Genu valgum was first noticed in June, 1905, and she was taken to the hospital a few weeks later. There were no signs of active rickets when she was admitted in July. The epiphyses were not enlarged and there was no albumin in the urine. Double osteotomy was performed by Mr. Nitch in August and the bones united well. About the middle of July, 1906—i.e., one year after operation—the wrists were first noticed to be swollen and when seen at the end of September by Mr. Nitch there was a definite enlargement of both radius and ulna at each

wrist. No other bones were affected and there was no albuminuria. Dr. Greg by the x rays found changes typical of rickets in both wrists, more marked in the ulna than in the radius. All the other bones examined were normal. If you look at the photograph of the wrists on the screen, you will, I think, see confirmation of the history that has been given—namely, a duration of only a few months. There are a sharp margin and cup-shaped edge at the lower end of the ulna. In the more advanced case last seen the lower edge of the diaphyses has lost its definition. The shaft is, of course, of normal density.

It would be extremely interesting, and important to our patients and their friends, if we could explain how and why this disease arises. I cannot pretend to be able to do this, but I should like to make a few remarks.

Adolescent rickets must, I think, be looked upon as practically the same disease as infantile rickets, modified in some respects by the age of the patient. The question naturally arises as to whether the adolescent form is merely a continuation of infantile rickets or entirely a fresh and distinct development. It might, of course, be a recrudescence of what the child had suffered in infancy. Against this latter view is the fact that on recovery from infantile rickets the bones are as a rule sclerotic, a condition in which one would imagine a relapse would be unlikely to occur. On the other hand, if it be considered to be a continuation of infantile rickets, the first attack must have been very mild in severity and without any tendency to recovery. For there is no history to be obtained of sufficient severity by which we can say definitely that the patient has suffered from rickets in infancy. I am inclined, therefore, to look upon adolescent rickets in many cases as a *distinct* development of the same disease arising in circumstances which are chiefly due to the age of the patient. If this be accepted we must assume that rickets may arise at any age from infancy to adolescence. In a great measure one would imagine the same causes would be at work to produce the same changes in the bones. Although we naturally attribute to diet the main responsibility for infantile rickets, we do not deny the influence of the hygienic surroundings of the patient's home. In fact, whatever interferes with metabolism of the body would be likely to prevent the normal development of the bones. One of the most important of these influences upon metabolism must be the higher nerve centres which, unimportant in infancy, are quickly developing towards the age of puberty. We must therefore, I think, acknowledge that new factors arise which are scarcely present in infancy, and which are of as much importance as food, if not more. The period of from 12 to 14 years of age is a time of great intellectual stress from the educational point of view, and anyone who has seen much of children will know what this may mean to many. In some children the competition of school life may produce all sorts of nerve trouble, from insomnia and night terrors to epileptiform convulsions or facial distortion and mimicry. The same intellectual strain and competition will continue throughout the adolescent period of life or even longer. This is more important than diet at this age, for if it be a cause of this trouble it is difficult to eliminate, and accounts perhaps for the long continuance of the adolescent cases. It is noticeable that in two of my patients diet can have had but little influence, as they were the children of fairly well-to-do parents. In the first case there is evidence of prolonged mental strain during school life and in the second the patient had reached the sixth standard of the board school at from 12 to 13 years of age. The latter fact perhaps only proves that she was not a backward child.

Sexual development is another factor and may have a far-reaching effect. It is difficult to judge of this, but in one of my patients (in a case recorded in 1886) premature sexual development was a marked feature. Want of air and exercise must also have a definite influence when once the disease has started, and may therefore be considered as a contributory cause. It probably has also a primary influence among the poor. I would look, therefore, for a variety of causes to produce such results as are seen in the patient whose age is now 23 years and whose wrists showed signs of active rickets two years ago.

There does not appear to be any special treatment applicable to cases of adolescent rickets. The habits and conduct of the patient must be inquired into and action taken in accordance with what is discovered. Diet, education, and fresh air are likely to be the most important points for inquiry. I am inclined to think that correction by osteotomy of a deformity due to this disease should be postponed till all active signs of rickets have disappeared. We occasionally see a recurrence of deformity after correction by operation. It is possible that this is due to the continuance of the same disease which caused the deformity. In the first patient, now aged 23 years, thyroid extract was given for six months last winter. I cannot say for certain that his improvement is due to this drug, but the fact remains that he now feels stronger than he has done for some years and that his lower limbs are better able to support the weight of his body. The bones of the wrists also show, I think, a marked improvement compared with their condition in 1904.

There are a large number of radiographs on the table besides those which I have shown by the epidiascope. These were all taken by Dr. Greg and presented to the museums of the Royal College of Surgeons of England and St. Thomas's Hospital. I am indebted to Mr. Shattock for the opportunity of showing them here to-night. There are also two specimens on the table. One is from the museum of the Royal College of Surgeons of England. It is a specimen of a rickety femur from a girl, 17 years of age, and was presented to the museum by Mr. E. Muirhead Little who has kindly consented to say a few words on the subject. The other specimen, from the Hospital for Sick Children, Great Ormond-street, is a femur from a child, 12 years of age, who was under the care of Sir Thomas Barlow in 1887. The disease had been noticed from the age of five years. The patient died from tuberculosis.

STOKES-ADAMS DISEASE AND CARDIAC ARRHYTHMIA.

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IN THE LANCET of Jan. 20th, 1906, p. 139, one of us reported a case of bradycardia and cardiac arrhythmia. The bradycardia was due to heart-block; the block was caused by depression of conductivity. Later this function became practically normal and the block which persisted was found to be caused by depression of excitability. Since the record published as stated the patient has died. His condition became more serious, he suffered from syncopal attacks associated with convulsions, and on May 16th his illness terminated in a fit. A necropsy was made and the heart was submitted to Professor A. Keith for a report on the auriculo-ventricular bundle (the *a.v.* bundle).[1] The information obtained from a careful analysis of the many tracings considered in conjunction with the post-mortem findings in the heart is of considerable interest and value in the comprehension of the pathology of this disease. We propose to give a short account of the course of the illness up to the patient's death and to discuss the points of interest which arise.

History of the case.—After the patient's discharge from hospital on Dec. 8th, 1905, he took great care of himself, exercised caution in his diet, ceased to indulge even moderately in alcohol, and kept his bowels open. For a short time he remained well and then began to notice symptoms of failing compensation, dyspnœa, and œdema of the legs. Two weeks prior to his readmission on Jan. 5th, 1906, he "caught cold" and was much troubled with a cough and copious expectoration. Shortly after this he entered on a period of liability to fits; these were for the most part of a very slight nature; he would feel lost when walking about, pause for a few moments, and then recover himself. At this time headache was increased, slight dizziness appeared, he was thirsty, and he was troubled with indigestion. On Jan. 4th, the night previous to his admission, this period of liability to fits was terminated at his

[1] For a full description of the *a.v.* bundle see THE LANCET, August 11th, 1906. The Auriculo-Ventricular Bundle of the Human Heart, by Arthur Keith and Martin W. Flack.

home by a severe, fully-developed attack, with unconsciousness and convulsive movements. On admission his temperature was 100° F. and it was noticed that he was thinner; intelligence and power of attention were good, and some headache, temporal and frontal, was present, more especially at night. He was a little deaf and complained of dizziness. His complexion was rather dusky and there was a fair degree of cyanosis. The sclerotics were faintly icteric. Rhonchi were present over all the chest and râles were heard at the bases; the percussion note over the right base was impaired and the breath sounds were feeble. The legs and abdominal wall were œdematous. Some ascites was present and the liver almost reached to the umbilicus. The frequency of the radial pulse was from 36 to 44; it was regular in force and slightly irregular in time. The area of cardiac dulness was greater than previously. The patient was suffering from bronchitis and failing compensation. He was kept in bed, given a light nutritious diet, and put on a stimulant expectorant mixture, to which was added sodium nitrite. In a few days the heart dulness had returned to its former limits and his general condition was ameliorated.

This, his final stay in hospital, lasted up to May 16th, the day of his death; during this time there were periods in which he was liable to syncopal seizures showing all grades of severity. These periods were characterised by the following prodromal symptoms: an increase of headache, dizziness, and troublesome thirst, some loss of acuteness in hearing and vision, and it was noticed that at these times his skin was greyer. These symptoms were present from Jan. 11th to 18th, from Feb. 1st to 10th, from March 4th to 11th, on March 16th and 17th, and finally for about ten days before he died. Seizures occurred on Jan. 12th, 16th, 17th, and 18th, Feb. 8th, March 7th, 8th, 9th, 10th, and 17th, and May 12th and 16th. On Jan. 16th and Feb. 8th they were extremely numerous and very severe.

In order to avoid repetition we shall limit our description of the fits to those which occurred on Feb. 8th. During the night of the 7th he slept badly and suffered from a severe headache. The next morning at 8 A.M. he had a severe and fully developed attack. At 8.30 A.M. he was propped up in bed conscious and distressed. His head was aching intensely and his mouth was quite parched. He was cyanosed and felt very cold. His temperature was 97°. Brandy was administered and hot bottles were applied; these means failed to check the shivering which continued till noon. By 1 A.M. he was of a good colour and comparatively comfortable. He was sitting up in bed when suddenly another attack seized him; no sooner had he recovered and spoken a few words than he was again attacked. He made one or two hurried respirations, his head fell on his breast, and he sank on to his pillow breathing stertorously; his cheeks and alæ nasi flapped in and out; he ceased breathing, his eyes closed, but his pupils were widely dilated and the eyeballs were turned upwards and to the left. His face was ashen grey, the malar flush had vanished, and he had all the appearance of a corpse. In a little, however, the colour gradually returned to his face, he sighed deeply and woke up. He raised himself a little, stared about, and then sank back on the pillows exhausted and sweating. During the seizure the radial pulse could not be felt until just before the return of consciousness. For the rest of the day he continued at intervals to have similar attacks. They were all severe, sometimes two or three followed each other in rapid succession, consciousness not being fully regained in the interval. In some of the fits stertorous breathing persisted throughout; in others respiration ceased entirely. Convulsive movements did not always occur; when they did they came on towards the end of the seizure and varied from slight twitching movements and rigidity to a severe general convulsion. At 6 P.M. the temperature was 102°. Throughout the day irregularity of the heart's action was marked. The usual pulse frequency was 30; before an attack it was occasionally found to be from 36 to 48 and once even 52; while immediately after the attacks the frequency was much higher, usually over 100. This was of short duration, for in a minute or so the rate dropped to 80 or 60 and soon afterwards to 40. Long pauses of ventricular silence—e.g., one of 15 seconds—were observed between the seizures, without there being any other disturbance. During the attacks longer pauses—e.g., of 75 seconds—were noted. On two occasions Cheyne-Stokes breathing occurred between the attacks; in the apnœic pause the pulse was regular; in the excited stage a bigeminal action was present. (See Fig. 10.) During the night of Feb. 8th the patient was most restless and only semi-conscious—muttering and groaning. Towards the morning he became more conscious and at 6 A.M. began to complain of severe pain in his head. Throughout this night his pulse was from 60 to 70 per minute; it had dropped to 52 by 11 A.M. on the 9th. His mind was then apparently clear and he asked for his pipe. On the 10th he looked worn out but was nevertheless much improved. On waking in the morning he asked if he had been ill and on being questioned said that he had no recollection of the events of the past few days. From this serious condition he steadily improved up to March 4th, his cough disappeared, and the headache became comparatively slight. On this date he entered on another period of liability to fits with the usual prodromal symptoms. The seizures were neither severe nor numerous and afterwards he was in excellent condition; the pulse was 70 to 80 and the conductivity was normal. Heart dulness was only four and a half inches to the left of the middle line—that is, less than it had ever been since his first admission.

This favourable state of affairs persisted up to March 25th, with the exception of the two days March 16th and 17th, when there were slight seizures. From the 25th to the 29th the pulse frequency had a wide range and varied between 32 and 80 per minute, in spite of which his general condition remained fairly good, and from the 30th to April 10th his condition was again excellent. From the latter date up to the patient's death he was not so well and complained of frontal headache, dyspnœa, and dizziness. On May 8th the bronchitis became worse and he was confined to bed. On the morning of the 12th he felt drowsy, "sick at heart," and "like to tummle." Just before noon he had a serious and unexpected attack. There was no warning. He fell back in bed, bluish-grey, and respiration and pulse ceased to be perceptible for three minutes. There was neither rigidity nor convulsions. The pulse returned for ten seconds and then again ceased, this time for one minute, and finally started off at 128 per minute, continued at this frequency for two or three minutes, and then rapidly dropped to 52 per minute. On the 16th at noon there was another seizure lasting about two minutes and followed by a temporary pulse frequency of 120 per minute. In the afternoon of the same day while one of us was taking records, with the patient propped up in bed and quietly talking, he suddenly slipped back unconscious and ashen grey. His respirations became shallow and his body rigid; the pulse had ceased to be recorded but the auricles continued to contract—in fact, it was the sudden cessation of the radial pulse which first drew attention to the onset of the fit. For three minutes there was no pulse at the radial and no heart sounds were audible. Then a few slight pulsations were detected at the wrist which shortly ceased and the cyanosis became more intense. Artificial respiration was performed and he breathed spontaneously for about 30 seconds. This ceased and although artificial respiration was kept up and other means were used to restore cardiac and respiratory activity there were no further signs of life.

Necropsy.—24 hours after death the body was rigid. There was slight œdema of the legs and ankles. The costal cartilages were calcified. The blood throughout the body was dark and fluid. The lungs were emphysematous. There were some old pleural adhesions. There was half a pint of clear fluid in the right pleural cavity. Signs of chronic bronchitis were present. The left lung weighed 15 ounces and the right 18 ounces. The pericardium was normal and contained a few drachms of clear straw-coloured fluid. The heart and vessels weighed 24 ounces. The coronary arteries were rigid and calcified, the right almost occluded, the occlusion being of old standing. The right auricle and ventricle were dilated and hypertrophied. The pulmonary artery and cusps were healthy. The left auricle was a little dilated and somewhat hypertrophied; the endocardium of the septal wall was striated. The mitral valve just admitted three fingers and the chordæ tendineæ were somewhat opaque. The aortic cusp of the mitral showed a slight patchy thickening towards its base. The left ventricle was hypertrophied and dilated. The aortic valve was competent to the water test and the cusps were healthy. There were slight dilatation of the first part of the arch of the aorta and a few patches of atheroma, the largest situated just beyond the point at which the pulmonary artery crossed the aorta. The peripheral arteries were a little thicker than normal. The stomach showed numerous petechiæ. The liver weighed three pounds six ounces and was somewhat

nutmeg in appearance. The kidneys together weighed 12½ ounces; they contained a few small cysts, their surface was rather irregular, the capsule stripped easily, and the cortex was slightly diminished. The vessels did not stand out on section. The spleen weighed 5½ ounces, was tough, and its capsule was thickened in patches. The pancreas and intestines were normal. The skull was very thick. The dura mater was thick and adherent in places to the arachnoid; there was slight excess of fluid under the arachnoid. There was sclerosis of the internal carotids and also of the vertebral arteries; the basilar artery was fairly normal. At no spot on the circle of Willis was the lumen of the vessels seriously encroached on. The fourth ventricle was apparently normal.

With his usual kindness Professor Keith made a microscopical examination of the *a.v.* bundle and from his report I quote the following: "The coronary arteries and the branch of the right coronary artery that runs through the bundle were atheromatous—thickening (irregular) of the intima and also of the sheath. The central fibrous body was an atheromatous mass. At the point of perforation (of the *a.v.* bundle) there are patches of a recent inflammatory process. There are patches of cells resolving into fibroblasts: the inflammatory process does not involve the whole bundle; it is patchy." He also points out that the central fibrous body is stretched and the musculature attached to it and in its near neighbourhood is shrunken and fibrosed. In this distension of the central body the *a.v.* bundle is involved; the pars membranacea septi is stretched, distended, and has lost its form.

Treatment.—This was largely symptomatic. For the bronchitis the patient received the usual remedies. His diet was light and plain. For exercise he walked about the grounds of the hospital. His headaches were much relieved by ten grains of phenacetin but it was found necessary to combine three grains of caffeine with the phenacetin, otherwise the dizziness was aggravated. One such powder gave relief for 12 hours. Nitrites were also exhibited for some time without much appreciable benefit. Syrup of iodine and tannic acid caused him to feel uncomfortable and had to be discontinued. Thyroid was administered over the greater part of his last stay in hospital. The exhibition of the thyroid is marked in the charts (Figs. 1 and 2) and its relationship to the pulse frequency and conductivity can be seen at a glance. From Jan. 20th to 23rd he received five grains a day, then from Jan. 24th to March 7th, and from March 11th to March 26th, and from April 12th to 18th he received ten grains daily, while from April 18th to May 16th the daily dose was increased to 15 grains. We had hoped that this treatment might possibly improve the conductivity of the *a.v.* bundle by increasing metabolism. However, conductivity varied irrespectively of the administration of the thyroid. From Jan. 20th to March 7th, during which time thyroid was taken continuously, the variations in conductivity were considerable and apparently independent of the thyroid. We refer

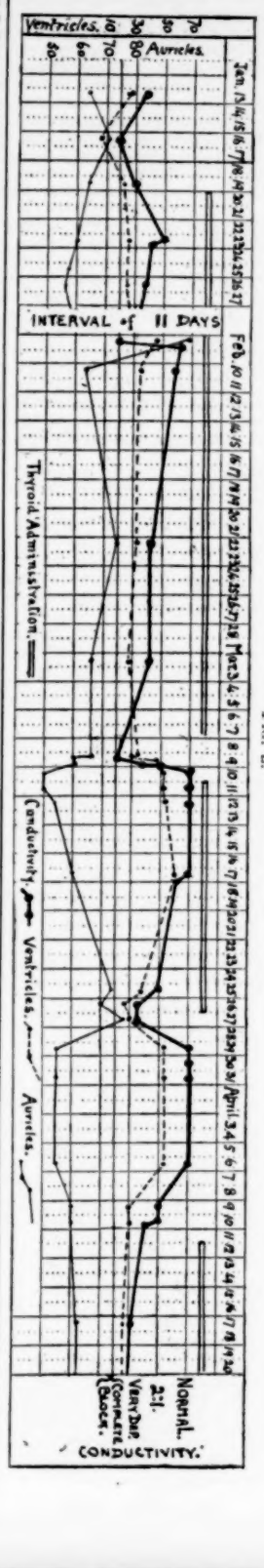


FIG. 2.

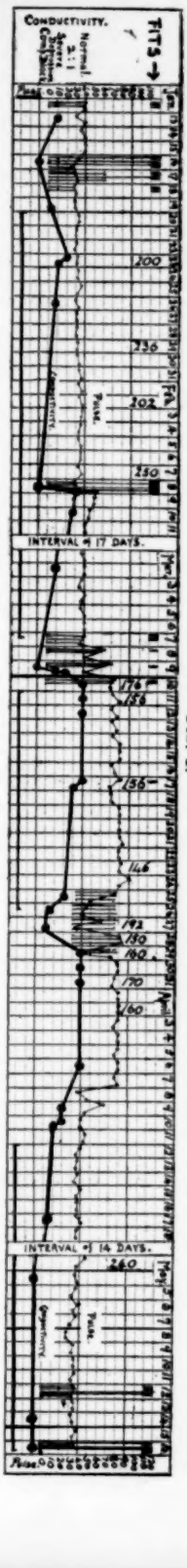


FIG. 1.

EXPLANATION OF FIGURES.

Fig. 1.—The chart in Fig. 1 is a graphic representation of the variations in conductivity and pulse frequency. Conductivity is indicated by the thick line. The degree of conductivity was obtained by analysing simultaneous tracings of the jugular and radial pulses. Note the variations during the first administration of thyroid; the thyroid administration is indicated by a straight horizontal line at the foot of the chart. Note that conductivity was normal from March 10th to 17th and again from March 29th to April 6th. The thin line indicates the pulse frequency as charted by the nursing staff morning and evening. From March 7th to 10th and from the 25th to the 28th the frequency was constantly varying. The fits occurred as charted. During the fits the pulse ceased. Note that the variations in conductivity were not necessarily associated with the incidence of fits. The systolic blood pressure was occasionally registered. It is recorded in the upper third of the chart. When conductivity was normal the reading averaged about 160 mm. of Hg, but when heart-block existed the pressure varied from 200 to 250 mm. of Hg.

Fig. 2.—The chart in Fig. 2 is a graphic representation of the variations in conductivity in relation to the frequency of the auricles and ventricles. The thick line indicates conductivity, the thin line auricular frequency, the dotted line ventricular frequency, while the double horizontal line shows when the patient was taking thyroid. Note the variations in auricular frequency during the first administration of thyroid extending from Jan. 20th to March 7th. Before the patient began thyroid the auricular frequency was charted at 63 per minute. Six weeks later it was recorded as 66; in the interval it had been as high as 100 per minute and as low as 56.

later to the relationship of the variations in auricular frequency and the thyroid administration.

The variations from the normal cardiac rhythm met with in this patient were many and interesting. They can be classified as follows: (1) those associated with, and caused by, variations in conductivity; (2) those caused by the occurrence of extra systoles, both auricular and ventricular in origin; (3) those caused by depression in the excitability of the cardiac muscle; (4) those caused by impaired contractility of the ventricle; and (5) a peculiar bigeminal form of pulse occasionally found during complete block.

These variations can best be considered by reference to simultaneous tracings of the radial and venous pulses. In Fig. 3 we have a tracing showing normal conduction along the *a.v.* bundle. This record was taken on March 12th, 1906, shortly after a series of seizures. In it we see that the inter-systolic time, the *ac* interval, is just one-fifth of a second. This *ac* interval is measured from the beginning of the wave *a* to the beginning of the wave *c* and is normally one-fifth of a second. It is so in Fig. 3. Similar tracings were obtained from March 10th to 17th and from March 29th to April 6th. (See Fig. 1.) Fig. 4 shows a slight prolongation in the *a c* interval. The conducting power of the bundle is becoming impaired and the passage of the stimulus from the auricle to the ventricle is somewhat delayed. In Fig. 4 the auricle is beating less frequently than in Fig. 3. An increased auricular frequency cannot therefore be blamed for the depression of conductivity observed in this tracing. In Fig. 5 we find a 2:1 rhythm, every second systole of the auricle failing to initiate a ventricular response. Conductivity is therefore more depressed than in Fig. 4. In this tracing the *a c* interval is normal. The inference is that the time between any two ventricular systoles is sufficient to enable conductivity to be completely restored. At one point in the tracing the regular 2:1 rhythm is interfered with and two consecutive auricular systoles initiate a ventricular response. As a result of thus diminishing the time allowed for the recovery of the bundle, the second stimulus passes much more slowly along the *a.v.* fibres and the length of the *a c* interval is doubled. Note that the wave *a* following on this long *a c* interval is very ample, the cause being that at this point the waves *c* and *a* have become superposed. The diagram Fig. 6 still further demonstrates the sequence of events. In this tracing the time occupied by two auricular cycles is sufficient to enable the *a.v.* bundle to recover itself and the *a c* interval is practically normal. When the conductivity becomes still further depressed the *a c* interval increases in duration in spite of the fact that the bundle has had the time of two auricular cycles in which to recover. Fig. 2 in THE LANCET of Jan. 20th, 1906, p. 141, is a good example of such a condition present for months in 1905. In the tracing (Fig. 7) taken on March 27th we find conductivity much more depressed than in the previous tracings. An analysis of such a tracing is almost impossible without the aid of a diagram; we have therefore drawn up Fig. 8. In this we find a state of affairs revealed which at first sight suggested the existence of complete block, because at *x* and *y* the auricles and ventricles apparently contracted together, and also because there appeared to be no regularity in the variations in the *a c* interval. However, further consideration of the tracing suggests the explanation expressed in the diagram—namely, that we are here dealing with a combination of a 3:1 and a 2:1 rhythm.

FIG. 3.

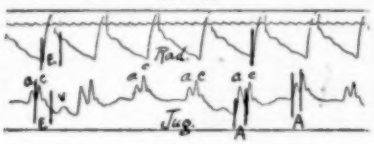


FIG. 4.

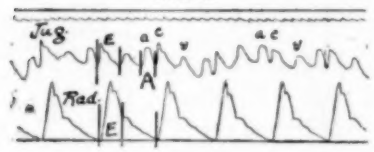


FIG. 5

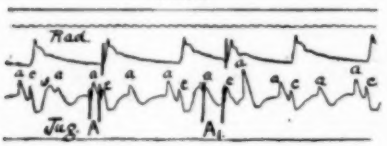
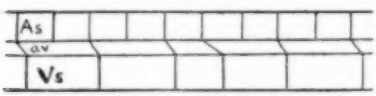


FIG. 6.



EXPLANATION OF FIGURES.

Fig. 3.—Tracing taken on March 12th, 1906. Showing conductivity normal. The Space E indicates in all the tracings the period of ventricular systole during which the semilunar valves are open, the sphygmic period. The wave *a*, preceding the period E, can only be due to the systole of the right auricle. The wave *c* is due to the impact of the carotid pulse. The space A represents the intersystolic time—the *a c* interval—and indicates the time taken by the stimulus to pass from the auricle to the ventricle. It is here one-fifth of a second which is normal. The time marker records one-fifth of a second. This applies to all the tracings.

Fig. 4.—Tracing taken on Sept. 29th, 1905, showing slight depression of conductivity. The *a c* interval A is more than one-fifth of a second. The auricular frequency is less than in Fig. 3.

Fig. 5.—Tracing taken on March 25th, 1906. It shows that every second auricular systole is blocked. The *a c* interval A is normal, the time allowed by two auricular cycles being sufficient completely to restore conductivity. At one point two successive auricular systoles get through and initiate ventricular systoles. Note the long *a c* interval A_1 the result of the too early passage of a stimulus.

Fig. 6.—Diagram constructed from the venous pulse in Fig. 5. *A s* = auricular systoles. *a v* = the passage of the stimulus along the *a.v.* bundle and indicates the length of the *a c* interval. *Vs* = ventricular systoles.

The two normal beats above referred to may be taken as indicating

[1] Vinnis (Goteling): De aanboudende Verdubbeling van den Hartslag. Wenckebach (K. F.): Beiträge zur Kenntnis der Menschlichen Herztätigkeit, Archiv für Anatomie und Physiologie, 1906, Taf. II., Fig. 2c.

the inherent rhythm of the ventricle at this time and each is about six-fifths of a second in duration. It is interesting to note that the second beat in each bigeminy is of the same duration as those marked *x*. For a full discussion of this condition we refer our readers to Wenckebach and Vinnis. Wenckebach, in conclusion, expresses it as his conviction "that doubled and continuous (*mehrfache*) heart activity must be regarded as an expression of a peculiar condition of the heart; as a peculiar pathological phenomenon, and that it plays a significant rôle in conditions of cardiac arrhythmia."

The tracing (Fig. 10) also indicates some failure in contractility. This failure is seen in the diminished size of the second element in the bigeminy. Other forms of arrhythmia were met with caused by extra systoles. Extra systoles of both auricular and ventricular types occurred. Extra systoles arising in the ventricular wall were met with after the seizures of March 10th and again following the depression of conductivity noted on March 27th. The variations in pulse frequency caused by depression of excitability in the cardiac musculature have been recorded in THE LANCET of Jan. 20th, 1906. We have drawn up two charts which demonstrate in a graphic manner some of the more interesting points. These charts are based on an analysis of over 200 tracings of the radial and venous pulses. In Fig. 1 we record the variations in conductivity, in relation to the seizures, to pulse-frequency, and to the administration of thyroid. These variations are indicated by a thick line; black dots signify the days on which tracings were taken from which the conductivity was calculated. The fine lines show the pulse-rate as recorded in the morning and evening by the nurses. The occurrence of fits is indicated in the second space below that in which the day of the month is shown. The horizontal black line at the foot of the chart shows when thyroid was being taken by the patient. We see at once that there were marked variations in conductivity; all grades from the normal to complete block were in evidence at one time or another. On two occasions, Feb. 8th and March 7th, there was a great improvement in conductivity subsequently to a series of seizures. This improvement lasted for some days and was then followed by a period of depression, while on March 28th the same sequence of events was recorded with this notable exception, there were no fits. This fact is most interesting and demonstrates that the subsequently improvement in conductivity was not dependent on the occurrence of fits. The fits were a consequence rather

FIG. 7.

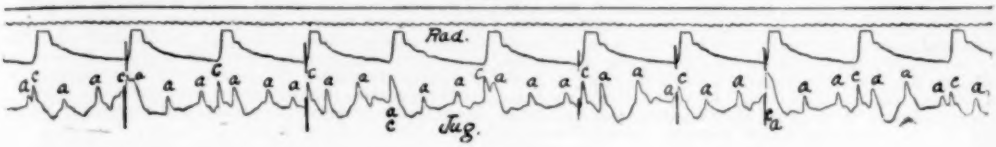


FIG. 8.

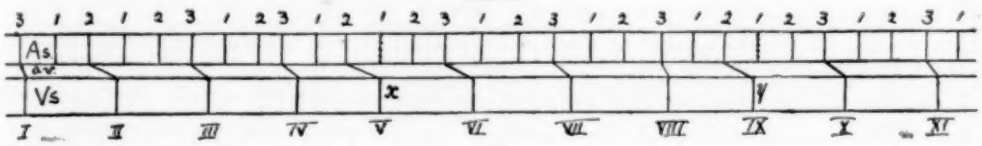


FIG. 9.

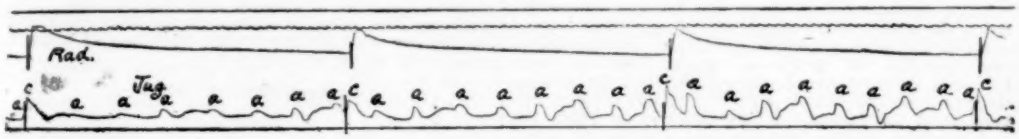


FIG. 10.

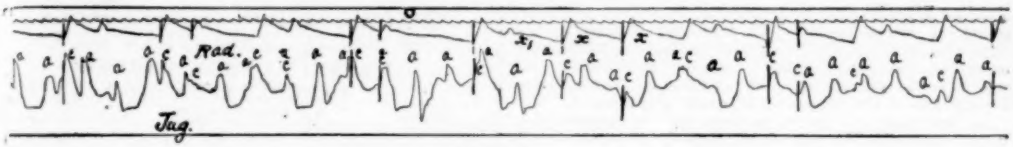
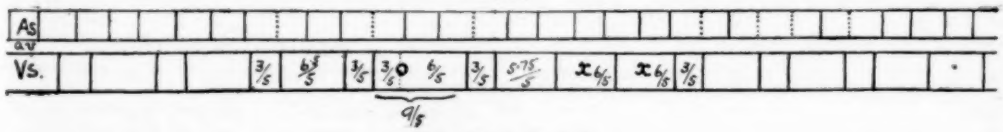


FIG. 11.



EXPLANATION OF FIGURES.

Fig. 7.—Tracing taken on March 27th. Showing a combination of a 2 : 1 and a 3 : 1 rhythm. The 3 : 1 rhythm allows conductivity to recover, while the 2 : 1 rhythm causes serious depression. At *x* and *y* the auricles and ventricles contract together, because the *a c* interval has been so prolonged.

Fig. 8 is a chart constructed from Fig. 7; the upper numerals refer to auricular systoles, the lower to ventricular systoles.

Fig. 9.—Tracing taken on Jan. 16th, 1906, between the seizures. It shows extreme bradycardia and auricle beating independently.

Fig. 10.—Tracing taken on Feb. 8th, 1906, the day of most severe fits. It shows a condition of complete block. The normal ventricular rhythm is seen at *x x* and is six-fifths of a second. Note that the second element of the bigeminy as x_1 is throughout of the same duration as *x*. An exception occurs at *o*, where the duration is nine-fifths of a second. The first element in the bigeminy averages about three-fifths of a second. At *o* therefore it is probable that another ventricular systole occurred too weak and feeble to open the aortic valves. Depression of contractility is well seen in this tracing.

Fig. 11.—Diagram constructed from Fig. 10; the numbers refer to the duration of the ventricular systoles and represent fifths of a second.

of the depression and instability of the function of conductivity. It is interesting to note how the pulse-frequency increases as conductivity improves and *vice versâ*.

In Fig. 2 we record the conductivity as before and compare it with the auricular and ventricular frequency. The auricular and ventricular frequency are calculated from the venous and radial pulse tracings. The administration of thyroid is shown by the two horizontal lines in the upper portion of the chart. This chart demonstrates marked variations in the auricular frequency which at first sight might appear to be the result of the administration of thyroid. This, however, is probably not the case, because we find similar and marked fluctuations in the auricular frequency occurring during the prolonged and uninterrupted administration of thyroid from Jan. 20th to March 7th. On Jan. 19th, the day before the patient began to take thyroid, the auricular frequency was 63, on Jan. 23rd it had fallen to 60, on Jan. 26th to 56, and on Feb. 8th it was recorded as 100. On Feb. 10th it had again fallen to 63, rising to 75 on Feb. 22nd. On March 2nd, the last record before the temporary cessation of the thyroid, the auricle was beating at 66. The auricular frequency appears therefore to vary independently of the administration of thyroid. We mention this because the chart from March 7th to April 10th certainly suggests that the variations in auricular frequency were the outcome of the exhibition of thyroid. For this reason it is unfortunate that the exhibition of thyroid was stopped on March 7th when the fits began and all routine treatment was in abeyance. So far as we know this method of charting the conductivity in relation to auricular and ventricular frequency is new, and we believe that observations carried out over long periods and charted in this manner will do much to help to a better understanding of the determining factor in the seizures.

In this patient the *a.v.* bundle was partially obliterated; it was functionally and organically below normal. As a result of this damage to "the pathway of the stimulus to contraction" a 2:1 rhythm had to our knowledge been present for months and probably, judging from the history, for years. Organic lesions of the *a. v.* bundle are, as a rule, progressive, and this man did not prove an exception. In January, 1906, he entered on what one may term the second stage of Stokes-Adams disease and began to suffer from syncopal and epileptiform seizures. Such seizures usually occurred in groups and were preceded by certain prodromal symptoms which indicated an increased liability to fits. Subsequently to these attacks the patient felt much better and on several occasions quite well. At such times conductivity was normal. Variations also occurred in conductivity, irrespective of the occurrence of convulsive seizures.

In this case two factors at least must be considered of importance: (1) The organic changes in the *a. v.* bundle which were demonstrated post mortem; and (2) nervous influences which either directly affected the conductivity of the remnant of the bundle or which altered the auricular frequency increasing it and so depressing conductivity by diminishing the resting periods of the bundle. It will probably be urged that the variations in auricular frequency were directly due to the action of the thyroid. There can, of course, be no doubt that the tendency of the thyroid would be to increase this frequency, but a careful consideration of the first half of Fig. 2 leads us to hold the view that there were agents other than thyroid affecting the auricular frequency. These agents were of varying intensity, causing great fluctuations in the degree of conductivity: note that serious depressions were followed by periods in which the conducting power of the damaged bundle was far above its normal. This is most suggestive of a vagus influence, and if it were not that the periods of depression were associated with increased auricular frequency we would feel inclined to ascribe these changes to vagal activity. Gaskell has shown that stimulation of the vagus[3] first lowers conductivity, and in the case of a 2:1 rhythm may cause complete block; later, as an after-effect of such stimulation, it greatly increases the conducting power and may even transform a 2:1 into a normal rhythm. The stimulation of the vagus required to bring about this change in conductivity need only be slight, and such slight stimulation does not necessarily affect auricular frequency. This is beautifully shown in a tracing published by one of us in the *Manchester Medical Chronicle* for September, 1906. It was obtained from a patient of Dr. James Mackenzie suffering from early aortic and mitral disease.[4] The slight stimulation of the vagus produced by swallowing was sufficient to bring about temporary block, and two ventricular systoles dropped out as a consequence.

An analysis of the tracings in this patient revealed a slight but persistent depression of conductivity. The vagus was consequently acting on an already functionally abnormal bundle and accordingly was potent. The increase in the depression of conductivity was not associated with any slowing of auricular frequency, and thus the tracing is a beautiful example of the selective action of the vagus, one function responding to the depressing effect because already damaged, the other escaping. Another example of the fact that a bundle damaged functionally or organically differs in its response from the normal bundle is found in the effect of digitalis on the heart.[5] Digitalis when pushed has no effect on conductivity unless the function is before the administration of the drug already below the normal. If there be a persistent depression in conductivity the digitalis still further increases this depression and eventually causes the dropping out of ventricular systoles and a tracing is obtained similar to that referred to above.

Summary in conclusion.—In this communication we have recorded a case of Stokes-Adams disease in its second stage—that is, in the stage of syncopal, apoplectiform, or epileptiform seizures. These seizures were of all grades of severity and tended to occur in groups with periods of comparative comfort intervening. The advent of seizures was usually indicated by definite prodromal symptoms. The necropsy revealed partial obliteration of the *a. v.* bundle; this would cause a persistent depression of conductivity. An analysis of numerous tracings revealed marked variations in conductivity, all grades from normal conduction to complete heart block being in evidence at one or another time. This suggests influences in addition to the organic lesion. Such influences were probably nervous in character and affected conductivity either directly through the vagus or indirectly by altering the auricular frequency.

[3] Gaskell: The Contraction of Cardiac Muscle, Text-book of Physiology, vol. ii. Edited by Schäfer.

[4] See also Brit. Med. Jour., Oct. 27th, 1906, p. 1110.

[5] Mackenzie (J.): The Action of Digitalis on the Human Heart, Brit. Med. Jour., March and April, 1905.

NOTE ON

DETERMINATIONS OF THE AMOUNT OF PHYSIOLOGICALLY ACTIVE HYDROCHLORIC ACID IN THE STOMACHS OF NORMAL MICE AND OF MICE SUFFERING FROM CANCER EXPERIMENTALLY PRODUCED.

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AND
H. WILSON HAKE, PH.D., F.I.C.,
LECTURER ON CHEMISTRY, WESTMINSTER HOSPITAL MEDICAL SCHOOL.

THE main object of our experiments has been to ascertain whether an increase or decrease of physiologically active HCl could be demonstrated in the stomachs of "cancer mice" with either ulcerated or non-ulcerated tumours, as compared with normal mice.

The experiments, which extended over the period December, 1905, to June, 1906, have involved the examination of over 500 stomachs in seven series, with an average number of 70 in each series, including all three classes—A (normal), B (non-ulcerated tumours), and C (ulcerated tumours). Dr. E. F. Bashford, director of the Imperial Cancer Research Fund, to whom we are indebted for the necessary material, arranged that the mice should be killed one hour after a full meal of bread and milk, and that the stomachs should be sent to us for examination as speedily as possible after death.

The method adopted for determining the physiologically active HCl was that described by Dr. W. H. Willcox, of St. Mary's Hospital, in THE LANCET,[1] with such small modifications as seemed desirable for our special purpose. The *modus operandi* is as follows. The stomachs belonging

[1] THE LANCET, June 10th, 1905, p. 1566.

respectively to Classes A, B, and C are counted, weighed, and macerated in water for about 12 hours, filtered through fine linen, and the filtrate from each series made up to 200 cubic centimetres. The testing of this filtrate is carried out in the following manner. (*a*) The *total chlorides* (inorganically and organically combined chlorine) is estimated by Volhard's method in 50 cubic centimetres. (*b*) 50 cubic centimetres are evaporated to dryness on a water-bath and charred at a gentle heat, after which the residual *inorganic chlorides* are determined by the same method. (*c*) The *total acidity* is determined in 50 cubic centimetres by titration with $\frac{N}{10}$ sodium hydrate solution, phenolphthalein being employed as the indicator. From these determinations are deduced: 1. Physiologically active HCl = $(a - b)$. 2. Organic acids in terms of HCl = $[c - (a - b)]$. Our results have been expressed as percentages of the average weight of the stomachs. Taking into consideration the whole seven series of experiments, we have found, on the average, a decided *increase* of physiologically active HCl in the stomachs of Classes B (non-ulcerated tumours) and C (ulcerated tumours) over that in the case of Class A (normal mice); the increase amounting in some cases to as much as 50 per cent.

It is necessary to direct attention to the fact that in these preliminary experiments, owing to the small amount of the contents of the mouse's stomach, the estimations have been carried out on extracts of stomach contents and stomach tissue, a fact which may possibly account for the interesting divergence between our results and those of a number of previous observers who have worked with material removed, after feeding with test meals, from the stomachs of human beings suffering from malignant disease. Further work dealing with the stomach contents only in normal and in "cancer" mice is in contemplation, and will be carried out as soon as opportunity serves for obtaining simultaneously the necessary number of mice.

ERYTHEMA AUTUMNALE, HARVEST RASH, OR PRURIGO DU ROUGET.

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WHEN investigating the origin of the skin affection ultimately traced to the handling of the caterpillar of the yellow-tailed moth and described in THE LANCET of August 4th of the present year I found that the agricultural labourers in Essex were acquainted with some form of irritating skin affection which more frequently affected their legs than any other part of the body and which they attributed to the "harvest spider," "harvest bug," or "harvesters," since the eruption was most frequently met with when these insects were most prevalent. Further inquiry showed that during this autumn the spider (Phalangium opilio) has been very prevalent and that sportsmen not wearing buskins have suffered severely from the pest. The *fons et origo mali*, however, is not the harvest spider but a mite parasitic upon it, the larva of a trombidium. Murray, in his "Economic Entomology," briefly refers to it (though he does not appear to regard it as a trombidium), and says: "This troublesome insect most prevails near the sea-shore where the soil is light. It begins to appear in the early part of July and is very troublesome in August. Their great numbers may be seen crawling upon and over all green things, on turnips, grass, and corn. ..... The larval form is that in which this species is generally encountered; and although it has long been supposed that it was merely the larva of a similar mite, yet it is only a few years since the fact was determined by direct observation." During the present season I have found that ladies were the chief sufferers, probably on account of their possessing more delicate skins. One medical friend who wrote to me for information said that the effect of "harvesters" was well known in Oxfordshire, that it was a most obstinate and distressing malady, and that some lady friends had been made very wretched by it. A lady informed me that she and her mother and sister had been into a remote country district for a holiday and had all returned because they had been attacked with a skin disease which they thought might be scabies but which I have no doubt was prurigo du rouget. A full description of this malady is given by P. Mégnin in "Les Parasites et les Maladies Parasitaires chez l'Homme, les Animaux Domestiques," &c., 1880. He calls the malady "prurigo du rouget," a term which he prefers to "erythema autumnale," under which it appears to have previously been described. He regards the very minute mite (rouget) which causes the malady as being the hexapod larva of the silky trombidian (Trombidium holosericeum). Plate XXV. shows this species in all its stages of development. The larval form is so small as to be barely visible to the naked eye, but being of a brick-red colour masses of them are easily distinguishable. They apparently breed upon plants but when opportunity occurs transfer themselves to man or animals. They chiefly attack persons with delicate skins and seem to prefer the legs and inner side of the thighs, but may reach any part of the body. From the legs they very quickly travel to the upper parts of the body unless their progress is arrested by some tight article of clothing. The base of the downy hairs attracts them and here they attach themselves by their formidable-looking claws and insinuate their suckers under the epidermis or into the glands at the base of the hairs. The abdomen of each lava then gradually distends until it is four or five times its original size and becomes visible as a bright red dot. The itching produced is so intense that the patient cannot rest. The skin swells, becomes red, or sometimes even violet, around the points attacked. These points, which may be a centimetre in diameter, are always discrete and usually have a central projection of appreciable size. Sometimes the eruption is distinctly papular or vesicular and if rubbed may become pustular.

The journal *Sante Publique* for May, 1872, contains the history of an outbreak which led to judicial proceedings. A number of men engaged in unloading certain sacks of corn speedily complained of intense itching on the exposed parts of the body. During the night five of them became covered with an eruption which was associated with a certain amount of fever, insomia, and ardent thirst. The initial erythema was followed by an eruption of acuminate pimples on the arms, the chest, and the neck. It was at first alleged that they had been poisoned but an expert who was consulted found that the corn swarmed with acari, and from the description given of these mites Mégnin concludes that they were the larva of a Trombidian and that these were the cause of the illness.

The treatment which has been found most beneficial in France is the application of benzene to kill the acari, followed by warm baths, or the use of dilute vinegar to allay the irritation. If a delicate part has been affected, such as the eyelid, the use of a fine needle may dislodge the parasite.

Chelmsford.

THE TREATMENT OF LARYNGEAL TUBERCULOSIS.[1]

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THE treatment of laryngeal tuberculosis will always be a difficult problem and the results will never in the main be brilliant. We have here a tuberculous lesion which occurs most often in a patient the subject of advanced consumption, in a part which is difficult of access, which can never be kept thoroughly aseptic, and where complete immobility cannot be obtained. When the disease in the lung is so far advanced or so rapidly progressing that a restoration to some degree of health and comfort cannot be looked for, I hold as strongly as possible that the treatment of the laryngeal affection should be entirely symptomatic; that where there are no severe symptoms it is both useless and cruel to submit the patient to active treatment either with cutting instruments or strong caustic pigments. Such cases make up a large proportion of all the cases of tuberculous laryngitis which come under my care. Nevertheless this is, to my mind, no reason why active treatment should be

[1] A post-graduate lecture delivered at the Mount Vernon Hospital for Consumption.

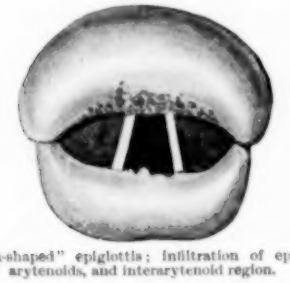
withheld in all cases. Tuberculous laryngitis often occurs in cases of chronic consumption the subjects of which, but for the laryngeal lesion, have many years of comparative health and comfort before them. In some of these patients complete local cure can be obtained by active treatment; in many others the infiltration cannot be entirely removed and some thickening remains, but even these find a marked improvement of symptoms and the disease at least becomes quiescent for a variable period, which is often of considerable duration. Again, tuberculosis attacks the larynges of patients in a quite early stage of pulmonary tuberculosis much more often than is generally realised. In such cases the lesion is seldom extensive but consists rather of infiltration or superficial ulceration of one cord or of the interarytenoid space; sometimes, however, massive infiltration is found, and it is then that surgical treatment obtains its most brilliant results. Early diagnosis of the laryngeal disease is of the greatest importance in cases of chronic or incipient pulmonary tuberculosis, and for this reason the routine inspection of the throats of such patients should be strongly urged. From this general introductory statement I will now proceed to detail.

Tuberculosis begins in the larynx as an infiltration of the submucous tissues which sooner or later tends to break down and form an ulcer; the length of time depends partly on the acuteness of the process but chiefly on the situation of the lesion. Thus on the cords and vocal processes where the subepithelial tissue is very scanty and the parts are subject to attrition ulceration occurs early; on the other hand, at the upper aperture of the larynx, especially on the arytenoids and aryteno epiglottidean folds, a very large amount of tuberculous infiltration may be formed without any ulceration. This, the so-called aryteno-epiglottic type of tuberculous laryngitis, is a formidable form of the disease. It rarely occurs except in severe cases of pulmonary tuberculosis; the lesion lies close to the pharynx, so that the much-dreaded dysphagia is very common, and the actual amount of tuberculous tissue is often very great and, situated beneath unbroken epithelium, is out of reach of treatment by pigments such as lactic acid. Nevertheless, when it

FIG. 1.

Infiltration of arytenoids; dependent epiglottis and slough on right ventricular band.

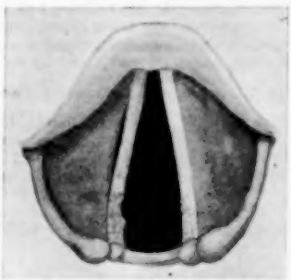
FIG. 2.



"Turban-shaped" epiglottis; infiltration of epiglottis, arytenoids, and interarytenoid region.

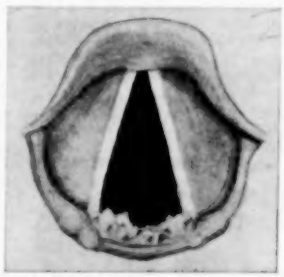
occurs in association with the less severe forms of pulmonary tuberculosis clipping away of the diseased tissue with punch-forceps combined with the use of pigments will often arrest the disease and sometimes result in complete local cure; even in advanced consumptives such treatment relieves the symptoms, especially dysphagia, far more surely than purely palliative measures.

FIG. 3.



Infiltration of cords; ulcer on vocal process; "gaping" of right ventricle.

FIG. 4.



Interarytenoid granulations arising from a tuberculous ulcer.

The other forms of tuberculous laryngitis begin in the interior of the larynx. The disease may affect the cords or the interarytenoid space, more rarely the ventricles, ventricular bands, or subglottic region. Such lesions may cause hoarseness or aphonia, irritation, and rarely dyspnœa, but until they reach the upper aperture of the larynx they do not produce severe dysphagia. In all these situations massive infiltration without ulceration is rare; the disease may be very extensive but has usually little mass and depth and, as it can be reached by curette and pigments, cutting forceps are seldom required. A favourite site for deep ulceration is on the inner aspect of the arytenoid cartilage starting from the vocal process; here the soft coverings are very scanty and perichondritis and necrosis of the arytenoid are said to supervene readily. I have watched several cases of such deep ulceration for months but I have never seen extensive perichondritis follow, and I am inclined to ascribe this to the careful use of strong antiseptic pigments which, when it does not result in healing, at least keeps the ulcer clean and prevents that pyogenic infection to which the perichondritis is ascribed.

The methods of treatment which have been used are very numerous, but I will only describe such as I myself employ. Antiseptic and caustic pigments are of great value in promoting the healing of ulcers and the shrinkage of granulations, but they have little or no effect on massive infiltration lying beneath unbroken epithelium; they must be applied under guidance with the mirror on a strong cotton-wool mop and must be thoroughly and forcibly rubbed in to the affected parts. The secret of success lies in their proper application and a light painting on of pigments is of little use. Among the many drugs employed in this way lactic acid still holds its place; it must be used in sufficient concentration, and for some time I have employed almost exclusively a mixture introduced by Lake consisting of lactic acid 50 per cent., formalin 7 per cent., and carbolic acid 10 per cent. This may be diluted to half strength for

very irritable patients and before omitting the treatment, when healing is almost complete. The carbolic acid in the mixture acts as a local analgesic and the smarting after application seldom lasts for more than a few minutes; it is usually best to apply the mixture daily, but when this cannot be done less frequent applications, even once a week, have sometimes a good effect.

The curettes which I employ are of Heryng's pattern; these are very useful for removing granulations and outgrowths in the interarytenoid space, for curetting ulcers there or on the bands or the base of the epiglottis, more rarely on the cords if they prove resistant to the action of pigment—in fact, for all parts of the interior of the larynx. In using the curette an attempt should be made to cut out the outgrowth or base of the ulcer cleanly in one piece. Considerable force is sometimes necessary and a good plan is, after guiding the instrument into position, to remove the mirror and, applying the left hand to the shaft of the instrument, to use it as a fulcrum for the sweep of the curette. Care must be taken when curetting the interarytenoid space lest the swing of the instrument be carried too far and the wall of the pharynx be injured.

For attacking massive infiltration at the upper aperture of the larynx punch forceps or double curettes are necessary. For the arytenoid region Lake's punch forceps are very convenient; they have the right curve, are very strong, and remove a good piece at each bite. It is important that the jaws should open as widely as is compatible with a sufficient leverage, for the arytenoid region is often so thickened that it is difficult to get it within the grasp of the forceps. Until lately the only method of excising the entire free portion of the epiglottis was with the galvano-cautery snare—a somewhat slow process and decidedly trying to the patient. In 1904 we had made for this purpose a large punch forceps which removes rapidly and at one bite the whole epiglottis above its attachments. Jurasz and Moritz Schmidt have each designed somewhat similar instruments but I have no personal experience of them. With our pattern, which we call the "Mount Vernon forceps," it is best to operate by direct vision after fully depressing the tongue with a spatula, but when the epiglottis is placed very low it is quite possible to guide the instrument with the laryngoscope. After all these operations on the larynx I apply Lake's mixture to the part, and I repeat the application daily in cases where healing can be hoped for. In cases of very advanced disease, where the operation is only done for the relief of dysphagia, I content myself with the insufflation once or twice a day of orthoform and amyloform in equal parts. These operations can be very rapidly performed and with remarkably little pain or distress even to very feeble patients if the larynx be first carefully anæsthetised. No fear need be entertained on the grounds of converting an intact infiltration into an ulcer, for healing occurs with extraordinary rapidity even in cases of advanced disease and septic infection of the wound is, in my experience, almost unknown.

No local anæsthetic is necessary before the application of pigments; the frequent use of cocaine has a most harmful effect on the appetite and the general health. At the most in very irritable cases a little 5 per cent. solution of cocaine to the pharynx may be employed until the patient becomes used to the manipulation. Before surgical operations thorough anæsthetisation is necessary. For this purpose I spray a little 10 per cent. cocaine on to the pharynx and then from a curved syringe guided by the mirror I drop a little of the same solution on to the epiglottis and on to the part to be operated on; after an interval of five minutes I repeat this and after a similar interval I perform the operation. In this way the cocaine is only applied where it is wanted and, very little being used, I have never seen bad effects; the method is pleasant to the patient and does not cause coughing or irritation.

In addition to local methods, general treatment is of the utmost importance and, except when there is acute catarrh of the upper respiratory tract, cases do best under sanatorium *régime*. But general treatment cannot, in my opinion, replace local treatment, for while the laryngeal lesion often improves or gets worse with the general condition, yet quite frequently they react independently and the throat improves under local treatment while the lung disease progresses, or the lungs get better while the laryngeal infiltration extends. It is very rarely that even early laryngeal infiltration becomes cured under general treatment without local measures, although this may happen occasionally. Rest for the voice is of the greatest value, especially when the cords themselves are affected, and loud whispering is as great a strain as low speech. Improvement is often marked under the use of a slate and pencil and the deaf-and-dumb alphabet.

Having described the methods of local treatment which I employ, the most important point now remains, the question of when to adopt these various measures. I will be as brief as possible, as I have already given in my introductory remarks some indication of my point of view. The adoption of local treatment with a view to treating or arresting the disease depends in some degree on the extent and severity of the local lesions, but above all things on the condition and progress of the disease in the lungs. Although, of course, no hard-and-fast line can be drawn, for the sake of clearness I divide the patients into three classes. In the first group come those cases in which the disease in the lungs is in an early stage and is not advancing rapidly and where the general health is good, and even more advanced cases which show a tendency to improve; in fact, cases in which, as far as the lungs are concerned, the physician would give a comparatively good prognosis. Of those cases one may say that, however extensive the laryngeal disease is, a cure is possible, and that the less disease is apparent in the lungs the bolder and more energetic should our treatment be. Usually in this class of case the laryngeal affection is not far advanced, but when massive infiltration is present early surgical treatment is indicated. If the disease is inaccessible by the mouth in such early cases of pulmonary tuberculosis I believe that thyrotomy is called for and will give good results, but this operation is quite unsuitable for cases where the lung disease is advanced. In estimating the extent and activity of the disease in the lung the extraordinary way in which the physical signs are masked in many cases of tuberculous laryngitis must be taken into account. Before undertaking serious operations on such cases the patient should be under observation for at least one or two weeks and the temperature and body weight carefully noted and considered.

The second group comprises the cases where the lung disease is so far advanced that a definite cure cannot be expected, but where the disease is chronic, where there is no rapid loss of weight, hectic fever or great debility. It is in this group that the greatest divergence of opinion as to treatment is found. I myself hold strongly that when the laryngeal lesions are not very extensive indeed active treatment offers a good chance of arrest and even of local cure. There is no doubt that death from pulmonary phthisis is far preferable to the very painful end which results from tuberculous laryngitis. Of course, each case must be judged on its merits as to whether it really falls into this group and the extent and severity of the local lesion must be considered. Thus in a case of chronic but advanced disease, with, for instance, a dry cavity, I am not disposed to curette a small tuberculous infiltration of the interarytenoid space which only causes a little hoarseness and is not likely to spread rapidly. On the other hand, if such a patient has begun to get infiltration of the arytenoid region, which will certainly soon cause dysphagia, or a deep ulcer at the vocal process which will sooner or later give rise to perichondritis and necrosis, active treatment is indicated. Again, a case of pulmonary tuberculosis, too advanced for cure, may still have many years of usefulness and work before him; an ulcer of a cord may cause aphonia and seriously interfere with work and comfort, and the regular use of pigments, extended perhaps over six or ten weeks, will often heal the ulcer; in less favourable cases it will arrest its progress and greatly improve the voice. In these cases of chronic pulmonary tuberculosis even massive infiltration of the arytenoids and epiglottis can sometimes be healed under surgical treatment.

CASE 1.—The patient, a girl aged 21 years, had had extensive disease of the left upper lobe six years previously, and later involvement of both lungs, but when I saw her in July, 1905, the disease was quiescent and her general health was fairly good. However, she had been hoarse for five weeks and dysphagia had ensued three weeks before I saw her, so that she was then unable to swallow solid food. The epiglottis was much infiltrated and was ulcerated on the under surface, but the rest of the larynx was not infected. I removed the epiglottis in two pieces at an interval of three weeks. The dysphagia was completely relieved from the date of the first operation, and a fortnight after the second operation the wound was healed and no disease was visible in the larynx. The organ is still healthy six months after the operation.

CASE 2.—A young man with extensive pulmonary tuberculosis involving both lungs and a cavity on the right side was admitted to the Mount Vernon Hospital in August, 1905. There was ulceration of both cords with infiltration of both arytenoids. As the lung disease was so

extensive and dysphagia was but slight I used no active treatment. However, a week later the dysphagia was much more severe and I clipped away a piece from the left arytenoid, which was the most swollen. The dysphagia was promptly relieved and I noted a fortnight later: "No dysphagia, left arytenoid swelling shrunken quite so that the corniculum laryngis is visible; right arytenoid much smaller." Three weeks after this the dysphagia recurred; the right arytenoid swelled and I removed a piece from it, after which there were no symptoms. As the general health of the patient had improved I used lactic acid daily and by the middle of November there was no arytenoid swelling. The cords were normal, but the ventricular bands were slightly swollen, as also was the left aryepiglottic fold. The patient has since had hæmoptysis twice but has had no more dysphagia. With increasing dysphagia it is unlikely that he would have lived untreated over September and he would have certainly had a painful ending. Such a case is not a cure, but it shows the good effect of surgical treatment in an advanced case.

CASE 3.—A woman, aged 30 years, with fairly early pulmonary tuberculosis, had infiltration of the right arytenoid and slight swelling of the left, with interarytenoid granulations and infiltration of the right cord. On May 23rd, 1905, daily painting with Lake's pigment was begun and on the 30th part of the right arytenoid was clipped away. The patient was discharged to the sanatorium on July 5th with the larynx quite healed, no disease being visible and a small puckered scar marking the site of the operation. She is now in service; I have examined her to-day and find the larynx absolutely normal. The scar of the operation is just visible, but there is no sign of disease.

The third group consists of the hopeless cases in which no local cure can be expected, cases where there is advanced or acute disease of the lungs, rapid loss of weight, hectic fever, severe cachexia, or miliary tuberculosis. In cases of this class the treatment must be entirely symptomatic; if there are no severe symptoms, only such mild measures as do not trouble the patient should be employed. Careful attention to the administration of easily swallowed non-irritating food, and the use of sedative inhalations or, better, oily solutions in a nebuliser will do much to ease the patient. With tolerant patients an oily intratracheal injection containing menthol, 1 per cent., creolin or guaiacol, 2 per cent., &c., seems to improve the local condition and give relief. But if dysphagia supervenes such treatment is not enough. Morphine and cocaine take away the last remains of appetite and hasten the end; they should only be used when the case is near its termination. Orthoform is much less harmful and, given as an insufflation, often acts remarkably well, while its effect may last as long as 24 hours. But for the relief of dysphagia surgical measures rank far above all analgesics, and in my opinion no patient need, or should, be allowed to die with severe dysphagia from tuberculous laryngitis. The clipping away of even a small piece from the swollen arytenoid or the removal of even part of an infiltrated epiglottis may be relied on almost instantly to relieve this distressing symptom. The operation takes but a few seconds and causes little disturbance. Subsequently orthoform may be employed and is better absorbed through the wound than from unbroken epithelium. The use of surgical measures as a palliative in advanced cases with dysphagia has not received from the profession the attention which it deserves. I can quote numerous examples, but I will confine myself to cases of removal of the epiglottis, both because this structure is rarely involved except in advanced disease of the lungs and larynx and because the resulting dysphagia is particularly severe. This operation has until recently been little practised.

In the 12 months from December, 1904, to November, 1905, I had 13 cases of massive infiltration of the epiglottis in the wards of the Mount Vernon Hospital. In eight of these I removed the epiglottis; of the remaining five one had no pain on swallowing, in two the pain was very slight, and in the other two there was marked arytenoid swelling and pieces were removed from this region with the result that the dysphagia was entirely relieved in one case and very much improved in the other. So that I operated in every case where severe dysphagia was due to epiglottic infiltration. The operation is rapidly performed, is hardly painful after the careful application of cocaine, and is never followed, in my experience, by more than the most insignificant bleeding. It may therefore be performed on almost any patient, however ill. Of the eight cases of excision I have already described one in which a complete local cure resulted. This is altogether an exceptional case, for the epiglottis is seldom attacked until the rest of the larynx and the lungs are extensively diseased. Lake has met with a similar case.[2] Of the remaining cases of excision, as also of the five in which excision was not performed, all are now dead, as was to be expected, for they were in the last stages of disease; but in every case of excision the dysphagia, which was severe, was much relieved and nearly always completely abolished, nor did it ever become severe again till death. Two patients left the hospital in fairly good health and remained alive for rather over three months; one of them, indeed, was seeking employment. The others remained alive for six and a half weeks, four weeks, four weeks, 25 days, and seven days respectively. In none was life shortened; in most it was undoubtedly prolonged, and in all the end was made incomparably easier. I should like to point out that I have only performed this operation when dysphagia was severe; where a good quantity of food could be taken I have held my hand, keeping to the rule that the treatment of these cases of advanced disease should be purely symptomatic.

It will be seen that, as I said at the beginning, the treatment of tuberculous laryngitis is difficult, never in the main brilliant, but not, I believe, unproductive of good results if the cases suitable for treatment are carefully chosen. Indiscriminate operation has done much to bring the treatment of this disease into disrepute. The pendulum has swung from enthusiasm to despair, as has so often happened in the treatment of tuberculosis in general, but I hope that professional opinion will soon steady itself and perceive both the limitations and the advantages of the active treatment of this distressing affection.

Wimpole-street, W.

[2] Lake and Barwell: Laryngeal Phthisis; second edition.

IS SULPHATE OF SODA A TRUE INTESTINAL ANTISEPTIC?

BY JOHN MABERLY, M.R.C.S. ENG., L.R.C.P. LOND.

THE answer which the majority of the medical profession will give to this question is doubtless a very decided negative, and yet I submit that there are grounds, clinical and possibly chemical, for thinking that an affirmative one affords a better explanation of the action of the drug under certain conditions. This at any rate is my contention, and whether I am correct or not in that contention there are at least sound reasons for considering that sulphate of soda has an action over and above that of a mere aperient and liver stimulant, one which points strongly in the direction of its being an intestinal antiseptic.

Some years ago Major W. J. Buchanan, I.M.S., published a paper in the *Indian Medical Gazette* (December, 1898) on the treatment of dysentery by means of magnesium sulphate and later the records of a series of cases successfully treated with sodium sulphate. After reading those papers I carefully carried out his treatment with one-drachm doses of sodium sulphate given every six hours in a large number of cases of dysentery and obtained excellent results. In his paper on magnesium sulphate Major Buchanan stated that it was necessary to secure "free gentle purgation," but in the cases which I treated with sodium sulphate I found that purgation was not necessarily produced but rather appeared to be undesirable; in fact, in the most successful cases the motions rapidly became less frequent, lost their dysenteric character, and became fæculent and of normal consistence in from two to four days, in spite of the continued exhibition of the drug. These results set me thinking and I began to question whether the accepted "gentle purgation" theory was a correct explanation of the action of the drug. With the object of obtaining a solution to the question I commenced giving the drug in infantile diarrhœa. In the first cases in which I tried it I found that it produced irritation, and although the character of the stools improved somewhat they did not decrease in frequency. Continued experimental administration, however, taught me that if I reduced the dose of the drug sufficiently to avoid any aperient action the motions in the majority of cases became less frequent, rapidly lost their objectionable odour and character, and became normal without other medicinal treatment. Another marked result was that the vomiting, which is so frequently a troublesome complication in these cases, ceased after one or two doses. (Milk diet was of course avoided as far as possible.) Since obtaining these results I have gradually relied more and more on sulphate of soda in the treatment of all septic bowel complaints and have become perfectly convinced that the drug given in proper doses is a true bowel antiseptic, independently of any aperient action, and further that if we wish to obtain this antiseptic action we must avoid doses which have

an aperient action. The doses which I am in the habit of giving commence with about six grains for a baby under six months old, increasing up to one drachm in the case of the adult, given every six hours in one of the flavoured waters such as fennel. Children over six months old are very tolerant of the drug and seldom exhibit any aperient effects from doses of from 10 to 20 grains. Having arrived at these conclusions with regard to the action of the drug, I extended its use in my practice to typhoid fever and was very interested to find that the results anticipated were obtained—namely, that the motions where loose and fœtid became more normal in appearance and odour, with the natural result that the temperature was lowered and ran a more benign course.

There are cases in which the drug absolutely fails to produce any effect and for which it is very difficult to find an explanation, unless it be that there is some obscure change in the intestinal mucous membrane which interferes with what may be considered the normal splitting up of the salts. The question now naturally arises, Is it possible that a body such as sulphate of soda can have any antiseptic action, and if so to what is it due? There has always been an impression in my mind that possibly the action may be due to the setting free of oxygen during the process of chemical decomposition of the drug in the intestines, and the interesting experiments published by Hay on the action of the saline cathartics in the *Journal of Anatomy and Physiology* in 1883–84 lend at any rate some colour to such an argument, or rather perhaps enable one to build up a hypothesis which gives some support to that contention. In these experiments Hay showed that sodium sulphate produced copious intestinal secretion according to the amount of the dose and the strength of the solution. He showed further that the sulphate was split up in the intestines; the *acid*, being more easily absorbed than the base, disappeared partially from the small intestines to return shortly afterwards. In the meantime the *base* was gradually undergoing absorption and excretion by the kidneys and never pursued the same peculiar course of absorption and re-excretion as the acid. That portion of the salt which remained within the bowel *unchanged* caused the secretion of intestinal mucous fluid and consequent purgation and not the portion absorbed into the blood.

Woodstock, Cape Colony.

THE SPIRILLA OF THE MOUTH.

BY KENNETH W. GOADBY, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.,
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IN a paper in THE LANCET[1] attention has been directed to the occurrence of spirilla in certain pathological conditions of the mouth and fauces described by Vincent as constituting a special form of angina and named by him "Vincent's angina." The organism described by Vincent[2] is a spirillum, showing also bacillary forms. It has not been obtained in pure culture by any recent observers. As comparatively little attention has been paid to the presence of spirilla in the mouth it seems not out of place to call to mind the various forms of spirilla that are from time to time met with in or about the mouth and which are for the most part uncultivatable. I can add my own experience to that of the authors in the paper quoted, that the spirilla and bacilli described by Vincent under the common term of bacillus fusiformis do not grow readily, if at all, upon the ordinary laboratory media. During the course of the last ten years I have been engaged with various problems concerned with the bacteriology of the mouth and have made use of a very large number of media of all sorts of composition and percentages of alkalinity, and I have rarely succeeded in obtaining satisfactory cultivations of the bacilli redescribed by Vincent on any of the media I have employed with but few exceptions—namely, the use of a potato gelatin, &c., described by me,[3] by means of which I was enabled to isolate from some seven or eight cases a spirillum which gave the same cultural characters and which is fully described, together with photographs, in the "Mycology of the Mouth."

Miller in "Micro organisms of the Mouth," p. 76 et seq., calls attention to three separate forms of spirilla which are to be found in the human mouth and if a cover-slip preparation be made from the pus in almost any case of gingival inflammation at least three morphological forms of spirilla may be observed, as follows: (1) thick comma-shaped bacilli with ends pointed and two terminal flagella; (2) true spirilla with regular spiral formation of from five to seven turns and pointed ends; and (3) spirochætæ, irregular filaments considerably longer than the regular spirilla and often running up to 15 or 20μ in length. The spirochætæ themselves show considerable irregularity in the number and turns in the thread which is also curved. The two former spirilla—that is to say, the comma form and the true spirilla—are actively motile, while the spirochætæ only exhibit a slight oscillating movement. All three forms stain somewhat badly with the ordinary aniline dyes and decolourise by Gram's method, by which they are distinguishable from the fragments of mycelium of the streptothrix buccalis, which retains Gram's stain. In stained preparation made directly from the mouth it is not infrequent to find with many of the spirilla forms darkly staining masses, apparently attached to the spirilla and forming part of the thread. These I have not observed in connexion with the comma forms but may be frequently seen with the spirochætæ. In cultivations upon saliva set with agar or in sterilised saliva with peptone added, as well as upon the medium I have elsewhere described—namely, potato gelatin—a development of extremely minute pin-point colonies may be seen which on microscopic examination are seen to be spirilla, for the most part degenerated. In the liquid media, potato-gelatin at 37° C., and on the other media a certain number of degenerated spirilla forms may be found for several days in the fluid at the bottom of the tube. Anaerobic cultures do not give any better result, with the exception of plates kept in an atmosphere of CO_2, when a slight development of mixed spirilla and threads may sometimes be observed. In the liquid media, particularly when the culture has been kept for some days, spirilla forms with attached rounded darkly staining masses may be seen, closely resembling the spirilla seen in the mouth. In the cultivations I was able to obtain some time ago this formation of apparent involution forms was well marked at the end of seven days.

The presence of spirilla is a marked feature in all pathological conditions of the mucous membrane of the mouth. I have frequently observed them associated with the diphtheria bacillus[4] in cases of genuine diphtheria from which I have been able to isolate the diphtheria bacillus; from almost all cases of alveolar osteitis, even in advanced stages; in acute and chronic simple gingivitis, and in several cases of disease of the antrum of Highmore. The spirillum, together with both the spirochætal and comma-shaped forms, appears to be always inclined to develop with any pathological condition of the mucous membrane of the mouth. This fact was pointed out long ago by Bernheim,[5] who considered the spirilla to be the active agent in ulcerative stomatitis, and it is true that both the spirilla and the fusiform bacillus or "fusiform bacillus of Vincent," which is rather of a lanceolate than a fusiform shape, are almost invariably present in ulcerative stomatitis or tissue necrosis of the gingival margin. That the spirillum and the fusiform bacillus, together with a large number of other morphological forms of bacteria, some of which I have succeeded in isolating and describing elsewhere, are to be found in the mouths of persons not in themselves exhibiting either the conditions of ulceration of their fauces or mouths, or showing any impairment of their health with sore throat, furred tongue, or other marked constitutional symptom, is common knowledge to anyone who has examined preparations made from the mouth. In a series of 85 cases of chronic alveolar osteitis, acute alveolar osteitis, and simple gingivitis, I have observed the spirilla in 75. Some few of these 75 cases showed certain general constitutional symptoms which, however, would seem to have been associated with other bacteria, notably those of the group of pus cocci, rather than to the spirilla, but the question of the relation of these organisms of pyogenic variety to oral pathology and associated general disturbance it is scarcely necessary to discuss here.

[1] Stomatitis and Tonsillitis, W. Harwood Yarred and P. N. Panton, THE LANCET, Feb. 17th, 1906, p. 438.
[2] Organism described by Vincent, THE LANCET, May 13th, 1905, p. 1260.
[3] Mycology of the Mouth, p. 196.
[4] Ibid., p. 194.
[5] Bernheim: Semaine Médicale, 1896.

Miller[6] and Finkler-Prior[7] have met with the vibrio Finkler-Prior on a few occasions from mouth cultivations, but the spirilla described above are at once differentiated from this organism by the extreme difficulty of their cultivation. One other organism is also mentioned by Miller, a curved bacillus which has been found both by Miller and myself occurring not uncommonly in the decayed dentine. The presence of carious teeth appears to be in no way associated with the presence of the mouth spirillum or of the spirochæta dentium, as in the cases referred to above no active caries existed, although there were a considerable number of fillings in certain of the mouths. In certain other of the mouths practically no caries existed at all. I have also found the spirillum sputagenum, or spirillum of the mouth, and the spirochæta dentium in the mouth inflammation occurring in the natives of India, of Africa, and other tropical regions, who were suffering from sprue, dysentery, beri-beri, and other tropical diseases in the wards of the seamen's hospitals, but owing to the extreme tediousness of the separation of these organism I have not attempted to obtain them in pure cultivation. The bacillus with pointed ends of lanceolate shape described by Vincent as the bacillus fusiformis was also present in about 20 per cent. of the cases.

With regard to the disappearance of this organism from the mouths of otherwise healthy persons, one of the best examples that has come to my notice was the boy described by the late Dr. Washbourn[8] and myself in the Transactions of the Odontological Society. This laboratory boy, who had no carious teeth but possessed reddened and inflamed gums (not necrotic but simple gingivitis), became so weary of the constant removal of material from his gums for the purpose of attempts to cultivate the spirillum which he had in particularly large numbers that he took to the use of a tooth-brush in self-defence and in a very short time entirely destroyed our source of spirilla. It would seem therefore that the occurrence of the spirillum first described by Miller and Lewis, Bernheim, and others, in such a large number of general pathological conditions, as well as in healthy individuals, would rather preclude its direct and pathological importance as the specific origin of a definite form of angina.

The staining of the organism is certainly carried out very satisfactorily by means of Leishman's stain, which I have used for a considerable time, but the organism is also beautifully stained by using an extremely dilute solution of carbolic fuchsin and allowing the stain to act for half an hour. The resemblance of the spirochætæ of the mouth to the Leishmann-Donovan bodies of kala-azar and to the spirillum of relapsing fever is by no means close when specimens of the three are closely compared. The spirillum of relapsing fever, as obtained from fresh blood, shows the most slight resemblance in its morphological characters to the mouth spirochæta.

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A CASE OF SCLEREMA NEONATORUM.

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SCLEREMA neonatorum is so rare in this country and the pathology of the disease is so obscure as to render the malady one of very great interest. The following case, in addition to being a typical example of the disease as usually met with in Great Britain, also presents some rare and interesting features which, so far as I can discover, have not previously been described in association with this disorder.

The patient, a female, was born at Corsham in Wiltshire in the early part of November, 1903. Both parents were, so far as could be ascertained, healthy and there was no history of intemperance in them. The father, an agricultural labourer, had not been out of work and no account of great privation could be obtained. The mother had had 14 confinements before this one and one miscarriage. Of the 14 confinements four of the children were stillborn; the other ten are alive and healthy. During this pregnancy the mother had "fits," which from her description may very well have been eclamptic in nature, but this I have not been able to ascertain; she had never had fits before and has had none since. Labour seems to have been easy and natural in every way and medical assistance was not considered necessary and was not obtained. The mother thinks that the child was born at full term but says that the baby was very small at the time of birth, otherwise she seemed healthy and natural. The peculiar condition of the skin was first observed four days after birth on the buttocks. No special coldness of the surface of the infant's body was noticed either then or at any other time.

The child was breast-fed entirely, but as she did not seem to thrive and was very "fractious and cross" at night she was taken to the Royal United Hospital at Bath. The baby was then seven weeks old and very small for her age, weighing only six pounds and measuring only 20 inches in length. She did not, however, appear emaciated. The bridge of the nose was depressed and the child had a pug-dog like type of a face, but there was no history of snuffles or of rash on the body other than the condition presently to be described. There had been no vomiting or diarrhœa. Occupying the lumbar and upper sacral regions was a patch of induration and thickening of the skin more or less quadrilateral in shape and about six inches from side to side and one inch and a half less in a vertical direction; it crossed the middle line but was not strictly symmetrical, extending further to the left than to the right. Over this patch the colour of the skin was rosy-red—a redness that faded on pressure and at once returned on removal of the pressure. The skin of this area, the edges of which were well defined, felt brawny and thickened and could not be pinched up or wrinkled. Coursing over the patch were several prominences resembling distended subcutaneous veins except in their colour which was the same as that of the rest of this area; they were raised slightly above the level of the rest of the patch, were of the diameter of a goose-quill, soft and fluid, and could be obliterated by pressure, quickly refilling from either extremity when the pressure was removed. Other patches of induration were present over each deltoid, especially towards its humeral insertion, and on each buttock spreading upwards over the iliac bones and in a tapering form down the outer side of each thigh. In these regions the thickening was even more marked than in the lumbar region but there were none of the fluid-containing vessels described above. In none of the indurated regions could pitting be obtained even on firm and prolonged pressure. The child, as a whole, was more rigid than usual and the movements at the hip-joints especially were hampered.

When the child first came under observation the skin over the indurated areas seemed distinctly tender to touch, and although this was less marked after she had been in hospital a short time signs of pain were almost invariably elicited by firm pressure on these areas. Examination of the throat, chest, and abdomen revealed nothing abnormal. The temperature, taken in the rectum, was on admission 97° F., and it was only once registered lower than this in circumstances presently to be described. There was no undue slowing of the pulse or respiration, the lowest pulse-rate recorded during the four weeks that the child spent in hospital being 116 and the lowest respiration-rate 30. The child's bowels acted daily, generally twice, but never more than three times in 24 hours, and the motions appeared to be natural. The infant was treated with small doses of grey powder, but except that she gained one and a half pounds in weight in three weeks no great change was discernible either in her general state of health or in the cutaneous lesions, though at times it was thought that the latter were perhaps a little softer than at the time of admission.

On Jan. 8th the child's temperature in the morning was 100° but otherwise she seemed much as usual and no physical signs of disease could be detected; in the evening the temperature was 99°. For the previous three weeks the temperature, taken twice a day, had kept between 97° and 99°. On the 11th, and again on the 15th, the morning temperature was 99·8°. On the 16th the child seemed distinctly less well; she took nourishment badly and was very drowsy and listless. The temperature, taken every four hours, rose from 101° in the morning to 102·2° at night, the pulse-rate varying from 136 to 140 and the respiration-rate keeping steady at 36 to the minute. A careful examination of the ears, throat, chest, abdomen, and limbs revealed nothing to account for the pyrexia. There were no squint and

[6] Miller: Deutsche Medicinische Wochenschrift, 1884, No. 36.
[7] Ibid., p. 77.
[8] Transactions of the Odontological Society, June, 1896.

no retraction of the head. On the following day the temperature continued to rise (except for a fall to 100° at noon) till at midnight it reached 105·6°. The pulse-rate rose to 160 and the respiration became very erratic, the child breathing at the rate of 80 a minute for considerable periods and then the rate sinking for a time to 40 or 50. Still no physical signs of disease apart from the pyrexia could be detected and the indurated areas of skin remained unaltered in appearance and to the touch. The child was put in a tepid bath, the temperature of which was rapidly lowered to 60° by the addition of cold water. At the end of ten minutes it was found that the temperature, taken in the rectum, had fallen to 95°, or a fall of over 10° in ten minutes. In the next four hours the temperature (taken every hour) gradually rose to 105° again and another bath was given and the child's temperature brought down to 98°. Four hours later the temperature was 103° and kept at about this level for the next six hours and then rose to 104·8°. A third bath was given and the temperature was lowered to 99° but in the next two hours it rose to 103·8°, fell a degree in the next hour, and three-quarters of an hour later the child died.

An examination of the body was made on the following day. The blush which had been present over the indurated areas had disappeared and there was also no trace to be discovered of the fluid-containing channels which have been mentioned above as occurring over the sclerosed area in the loins. On cutting through the skin and subcutaneous tissue greater resistance to the knife was encountered than usual and it was found that the panniculus adiposus instead of containing loose, yellow, greasy fat was almost dead white in colour, soft, but compact, intimately adherent to the skin, and resembling in appearance inspissated sebum divided by connective tissue into small areas from about one-sixteenth to one-eighth of an inch square. This layer varied much in thickness in different parts; over the chest it was almost absent, whilst over the buttocks it attained a depth of about three-eighths of an inch. The transition between the sclerosed areas felt during life and the adjoining skin was not nearly so abrupt as it had appeared before death and depended simply on differences in the depth of this fatty layer. There were no fluid and no transparent gelatinous material such as has been described in several of these cases as lying on the subjacent aponeurosis but the stearine-like deposit was separated from the underlying deep fascia by a thin fibrous membrane. No trace of normal human fat could be discovered anywhere; the absence of any fat in the omentum or round the kidney was very conspicuous. The brain, heart, lungs, thymus, liver, spleen, kidneys, adrenals, and alimentary canal presented no abnormality to the naked eye, though possibly the organs were somewhat congested. Microscopically the papillæ of the skin were well marked and the blood-vessels of the cutis vera had thickened walls. The connective tissue of the cutis vera was more dense than normal and strands of fibrous tissue extended into the subcutaneous tissue, dividing it up into compartments in which was contained the stearine-like deposit. This deposit stained brightly with Fett Ponceau and deeply with osmic acid, the latter reaction being especially interesting in view of the fact that only olein and oleic acid, and not palmitin or stearine, are said to reduce osmic acid.

Remarks.—This was a typical example of the disease sclerema neonatorum as it is usually met with in Great Britain. The aspect of prematurity of the infant, the time when the disease was first noticed (four days after birth), the character and distribution of the lesions, and the general features of the case when it first came under observation agree very closely with two cases reported by Dr. A. E. Garrod[1] and a case reported by Dr. J. W. Ballantyne.[2] Dr. Garrod[3] says that the disease is much less fatal than the form commonly met with on the continent (where, especially in France and Italy, it is much more frequently met with than in this country), and both his cases recovered. A noteworthy feature of the case just described was the presence of the fluid-containing vessels which were found on the indurated patch in the loins. They were quite superficial and thin-walled and after death no trace of them could be discovered. Possibly they were lymph spaces distended with fluid fat which after death solidified.

The hyperpyrexia is interesting in view of the fact that sclerema neonatorum is associated at its onset with considerable lowering of the body temperature. A temperature as low as 69·9° F. has been met with, though in milder cases it seldom falls below 95°.

G. Somma[4] (quoted by Dr. Ballantyne) says that "complications of an inflammatory nature are not able to raise the body heat." He is, however, speaking of the disease whilst still in an active phase, and the observation would not apply to a case such as the present in which it may be presumed that the morbific agent had ceased to exert its influence, leaving the cutaneous lesions as the result of its activity. Dr. Garrod mentions that in one of his cases when recovering the temperature sometimes rose as high as 100·4°.

It is noteworthy that in my own case the high temperature had no appreciable effect on the condition of the skin and subcutaneous tissue; no softening or other change in the indurated areas could be made out. As regards the morbid anatomy, the most striking change was the absence of normal fat from the interior of the body and its conversion in the panniculus adiposus into a solid stearine-like deposit.

My thanks are due to Dr. E. J. Cave for permission to report this case, the patient being under his care at the hospital.

Bath.

[1] Garrod: Transactions of the Medical Society, 1895, and Transactions of the Clinical Society, 1897.

[2] Ballantyne: Diseases and Deformities of the Fœtus, vol. ii., p. 1, 1895.

[3] Garrod: Encyclopædia Medica, vol. xi., p. 3.

[4] Somma: Lo Sclerema dei Neonati, Naples, 1892.

THE NEEDS OF THE BODY ON SUNDAY.[1]

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I WISH to thank you, in the first place, for inviting me to read a paper this afternoon upon the Needs of the Body on Sunday and thus giving me the opportunity of expressing the convictions which have been gradually forced upon me during nearly 25 years of busy hospital and private practice. As medical officer of health to the Notts county council my opportunities of observation upon this point are more limited and more indirect; but so far as they go they confirm my previous experience.

The primary need of the body on Sunday is rest. From history one may learn, speaking very generally, that the races and nations which have observed periodical, or frequent though irregular, days of rest from ordinary labour have proved superior to others. The Jews, though comparatively small in numbers, were pre-eminent among the races by whom they were surrounded. They have even to this day preserved a remarkable superiority in health, vigour, and vitality, as well as in certain intellectual qualities. There is some reason to think that the strict observance of the Sabbath by the Jews was the outcome of bitter experience in the past. We may judge that in the days of their captivity in Egypt they were overworked and had no opportunity of observing a weekly day of rest. For we read (Deuteronomy v., 14, 15) that Moses enjoined for the Sabbath: "Thou shalt not do any work, thou, nor thy son, nor thy daughter, nor thy man-servant, nor thy maid-servant, nor thine ox, nor thine ass, nor any of thy cattle, nor thy stranger that is within thy gates; that thy man-servant and thy maid-servant may rest as well as thou. And thou shalt remember that thou wast a servant in the land of Egypt, and the Lord thy God brought thee out thence by a mighty hand and by a stretched out arm: therefore the Lord thy God commanded thee to keep the Sabbath day."

So is it, also, with individuals. No one who has not experienced the strain of working seven days a week, as have many clergymen and most doctors, can realise to the full the value of one day's rest each week. At the time of the French Revolution a trial was made of resting on one day in ten instead of one in seven; but the rest was found to be insufficient. Experienced horsekeepers will tell you that a horse which can perform a certain task quite satisfactorily for six days a week and continue in good condition for months or years, soon begins to fail when required to perform a similar task regularly seven days a week without intermission. And although the human animal has powers of adaptation to life under unfavourable conditions greater than are possessed by any other animal; yet man,

[1] A paper read on Oct. 17th to the Southwell Diocesan Conference at Nottingham.

too, soon shows signs of the undue stress put upon him when required to work continuously seven days a week. Fortunately, Sunday labour, at any rate without special compensatory rest, is the exception; or we might have to bewail a true "degeneration of the stock" as well as a "deterioration of the race."

If the Sunday rest which is peculiar to Jews and Christians be so necessary to the well-being of a nation how can the long pre-eminence of the Romans be explained? Probably, the correct explanation has been already partly suggested. The Roman citizens had many—very probably too many—holidays, though they may not have been at equal intervals. But just as in the case of the Israelites in Egypt it is very doubtful whether the slaves, by whom almost all the manual work was done, shared in those festivals and holidays. And moreover, the manhood of the nation was constantly being recruited by the conquest and incorporation of new nations hitherto not degenerated by civilisation. Even though the Mahomedans keep their Friday and the members of other religions observe days for worship and for rest there is no real equivalent to the Jewish Sabbath and the Christian Sunday; and the Christian nations differing widely in race and in other respects have conquered the world in the arts of peace as well as in the strife of war.

We may take it, therefore, both from the experience of the past and from our knowledge of the present that for the workers the great need for the body on Sunday is rest. How is that rest to be obtained, what form is it to take, and are we in danger of losing it?

At this stage I must take exception to any complete and arbitrary distinction and separation of the body from the mind. So far as I can I will confine my remarks to the needs of the body, as requested; but the whole working of the body is ruled by the nervous system and the seat of the mind is in the central nervous system. The work of the nervous system, and especially of the brain, is the hardest and most exhausting of which the human body is capable, and requires the longest periods of rest for recuperation. St. Paul realised to some extent the unity of the body when he said (I. Corinthians xii., 12 *et seq.*): "For as the body is one, and hath many members, and all the members of that body, being many, are one body; so, &c. ..... If the ear shall say, Because I am not the eye, I am not of the body; is it therefore not of the body? If the whole body were an eye, where were the hearing? If the whole were hearing where were the smelling? ..... But now are they many members but one body." I cannot, therefore, entirely avoid dealing with the needs of the mind, though I shall be glad to leave that so far as possible to the gentlemen who are to follow me.

I may be taken to task for quoting St. Paul upon such a subject as the unity of the body and the interdependence of the various parts of it. I might have quoted instead the old Latin fable of the belly and its members. But to return to modern times, and especially to the *Sturm und Drang* of the present day, there is an urgent and constantly growing need of impressing upon people the paramount influence of the central nervous system and of the mind upon the functions of organic life. It is fatal to the maintenance of a healthy equilibrium to attempt to treat the body and the mind as two separate entities.

If you visit one of our public asylums and examine the mental wrecks that are collected and taken care of in those institutions you will find that the body suffers very obviously as well as the mind, though frequently not to an equal degree. The influence of the emotions of joy, fear, or anger in disturbing the health of the body and sometimes causing sudden death is well known if not well understood. Though sorrow and disappointment may not often lead to actual rupture of the heart—a rare termination of a not very common disease—yet the general phrase "a broken heart" represents a very real effect of sorrow and anxiety which can be accurately defined in pathological terms. The high-pressure brain-work entailed by present-day competition is a growing cause of arterial degeneration, and of consequent apoplexy, as well as of some forms of valvular heart disease.

The process of digestion requires for its successful performance the expenditure of a certain amount of nervous energy to enable the various glands to secrete the digestive ferments, and also requires that the stomach and other organs engaged in the various processes of digestion and assimilation should be supplied during the period of their activity with a much greater quantity of blood than during rest. The amount of nervous energy available for each individual is limited, and if too much be devoted to muscular work, or more especially to brain work, too little remains for the needs of digestion and for other processes of organic life, and indigestion, with other attendant evils, results. Similarly, the exhaustion of nervous energy due to any sudden physical or mental shock or from the unrestrained predominance of any paramount interest or anxiety may entail an almost total cessation of the power of digestion. Consequently many persons who habitually work either with their muscles or with their brains dangerously near to the limits of exhaustion are accustomed to reduce the quantity of food they take not only below the dictates of their appetites (which might be a good thing), but not infrequently below the needs of healthy nutrition, because the nervous energy they have left after their work is insufficient to enable the stomach to digest the amount of food the body requires. Upon this disaster surely follows. For such overworked persons, supposing their excessive work to be unavoidable, there is a legitimate excuse for making the Sunday dinner somewhat of a feast to compensate for the week's deficiencies. Their Sunday rest is largely devoted to the needs of digestion. The influence of the nervous system in deranging the ordered functions of intestinal digestion must be familiar to some in the nervous diarrhœa which in some persons precedes a railway journey or any cause of worry.

I have dwelt at this length upon the inseparable relations of the mind and the body, not to quarrel with the task that has been allotted to me, but to show that the form the Sunday's rest should take must depend largely upon whether the muscles or the brain and nervous system have been chiefly employed in the week's work; and also in order to combat the widely prevailing doctrine that a change of work is sufficient rest. A change of work is a useful and sufficient recreation for those who have been working well within the limits of exhaustion and have plenty of nervous energy left, but who have become "stale" as regards the particular class of work that occupies them during the week. For those, on the contrary, who are regularly working close up to the stage of complete exhaustion a Sunday in bed is a more useful rest and may enable them to continue for a longer period without a breakdown. The proper remedy, however, in such a case is to abate the overwork and then they may again spend their Sundays in a more interesting manner.

Fatigue is a complex process. Quite apart from the structural wear and tear accompanying functional activity, fatigue is produced by a failure of the nervous energy, which may be likened to a failure of the driving power, and by an accumulation of the waste products which result from functional activity. The two first may be repaired by food and rest, but the immediate requirement for a restoration of activity is the removal of the waste products. In the fermentation of sugar by the yeast plant alcohol is produced and the accumulation of the alcohol beyond a certain proportion checks the growth of the yeast plant and brings fermentation to a stop. The functional activity of the muscles results in the accumulation of a waste product in the muscles, which impairs their action, and is one of the principal causes of the sense of fatigue. The activity of the nervous tissues also results in the production of waste materials the accumulation of which impairs the continued activity of the nervous system. These waste products, which are most deleterious not only to the tissues in which they are produced but to most of the organs of the body, are more quickly and readily eliminated in the young than in those more advanced in years, and it is to the elimination of these deleterious substances that our thoughts should be directed in devising the form of "*rest*" that the hard-worked body needs on Sunday. Mere inaction is not in all cases the form of rest most needed, though it might be necessary for some. Nor, on the other hand, is a long and fatiguing walk the kind of rest required for a brain worker whose nervous energy is already nearly exhausted. But, speaking of those whose work is confined within the limits of moderation and who have a sufficient reserve of energy, the muscle workers require on Sundays comparative muscular inactivity with stimulation of the brain and nervous system through the mind and the senses, and the brain workers with a sedentary indoor occupation and insufficient opportunities for outdoor exercise during the week need as much outdoor exercise on Sundays as will leave them quite free from fatigue on

Monday morning. More exercise than that may have been a pleasure, but has done their bodily health harm rather than good.

The indoor workers of our large towns, who form such a large proportion of the population, need exercise in the open air to expand the lungs and to keep up the activity of the circulation. They would become less sensitive to cold and the various vital functions needed for the maintenance of nutrition and the elimination of waste would be better performed. There is a tendency in lieu of exercise to seek some other stimulant and, unconscious of the risks, to fly to alcohol. The need of stimulation is a natural one, but the mode of satisfying it may be most pernicious, and the employment of alcohol to satisfy a craving for stimulation is most dangerous. The stimulating effects of alcohol upon the circulation are very transient, while the effects of alcohol upon the nervous system are almost entirely sedative and poisonous.

Many overwrought brain workers—and by brain workers I do not mean only those engaged in literary work but all whose work is not chiefly manual—are too exhausted by the end of the week to be able to take much open-air exercise, and too restless from an over-excited nervous system to rest and do nothing. Some of these increase their exhaustion by considering it their duty to teach in a Sunday school or attend too many religious services. They have lost all sense of moderation, and a long period of enforced rest in consequence of nervous breakdown is the result. On the other hand, the soothing effects upon a worried brain and excited nervous system of suitable religious exercises may be excellent and no better treatment for some cases of brain fag could be devised. In saying this I am speaking purely from the medical point of view. Anything further is not my province. And while advocating, as in duty bound, open-air exercise and recreation on Sundays for those whose straitened lives prevent sufficient relaxation during the week I must not be taken as advising neglect of religious observances. Those who wish will find both time and opportunity to join in public worship as well as improve their bodily health.

I ought to make this further limitation. My remarks are addressed only to those who from choice or necessity lead "the strenuous life." We may divide the population, from school age onwards, into three classes: (1) those who are overworked; (2) those who have sufficient work; and (3) those who have too little work. What proportion should be placed in Class 1 and what proportion in Class 2 must be largely a matter of opinion; and the results would vary considerably according as the opinions of the employer or of the employed, of the worker or of an impartial onlooker were chiefly regarded. The mode of spending Sunday, supposing it to be free from vice, influences health mainly in Class 1 and in Class 2. The problems connected with Class 3, which embraces the extremes of the social scale, are far more complex. For them "the needs of the body on Sunday" form only a very small part of a very large subject with which I do not venture to deal.

I have said little hitherto about the place of recreation in promoting health. The value of mere pleasure I should rate as very small; but, undoubtedly, in addition to religious services, art and music should take a place beside the beauties of nature in soothing the tired worker during his Sunday rest. Noise is an important cause of nervous fatigue; and notwithstanding many efforts to diminish it, noise seems inseparable from big towns and manufacturing processes. To many people the *quiet* of Sunday is a very important part of their Sunday rest.

I cannot refrain, in conclusion, from preaching the gospel of Pure Air on Sundays. Many a breakdown attributed to overwork is largely due to the impure air of the building, whether office, factory, or shop, where the work is carried on. If relief be sought in recreation, the air of the concert room, lecture room, or theatre is worse, and frequently more than counteracts the benefit of the recreation. One of our duties in trying to make provision for the needs of the body on Sunday is to see to it that our churches are better ventilated; and for the failure in this matter laymen must take their full share of responsibility as well as the clergy. In all these matters respect for the human body should teach men to treat themselves, and to require others to treat them, with more consideration and more in accordance with those laws, compliance with which is essential in order to attain the highest excellence.

Southwell.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Weever Sting.—What is Jensen's Tumour?—Fatal Bone Disease.—A Contribution to the Pathology of the Sphincters in Cranial and Spinal Injuries.

A MEETING of this society was held on Nov. 6th, Dr. P. H. PYE SMITH, the President, being in the chair.

Dr. H. MUIR EVANS reported some Observations on Trachinus Venom or Weever Sting. The previous work of Bottard, Gressin, Phisalix, and Briot, having been referred to, the method of extracting the poison with a needle and syringe was described. In this way several grammes of dried trachinus venom were obtained from over 2000 weever fish. Experiments were made with this and with the fresh venom kept on ice. The symptoms resulting from a prick consisted of at first an acute lancinating pain producing local paralysis, and among nervous persons vomiting might occur. A painful tingling then attacked the wounded part which swelled up and became inflamed; this might go on to phlegmonous inflammation and gangrene. Fever and delirium might accompany this and the acute symptoms lasted for from two to three hours to several days. The injection of 0·015 gramme of dried venom caused death in small fish (four to six inches) in a few hours. The fish immediately lay on its side quivering, with irregular respiratory movements, and sharply curved away from the site of inoculation, which was made in the muscles of the lateral line. With 0·01 gramme the fish lived for a week or ten days and showed locally a necrosis of the muscles with hæmorrhagic areas round the track of the needle. A mouse injected with 0·01 gramme died in seven days with symptoms of paralysis of the hind-quarters and a dry necrosis of the parts at the site of inoculation; the vessels of the neck and axilla and brain sinuses were engorged. Intravenous injections of 0·1 gramme of dried venom caused in a cat a sudden and severe fall of blood pressure and though the heart ceased to beat in two minutes respiratory movements continued for another two minutes. If a less dose was injected the preliminary cardiac depression was recovered from, but for a quarter of an hour the respiratory movements became very irregular and nearly ended in death. It would appear that if the dose injected did not cause death by immediate collapse a respiratory paralysis followed which might be recovered from. The hæmolytic action had been studied with fresh venom after the methods used by Preston and Morgenroth, and described in Ehrlich's "Immunity." The hæmolytic effects had been studied on the blood of fish, pigeon, guinea-pig, sheep, ox, horse, and man. Photographs of these experiments were shown. In all cases the blood corpuscles were dissolved by the venom without the addition of sera, normal or heated. Normal sera did not delay but increased hæmolysis. Heated sera had a variable effect on hæmolysis. It appeared that this poison acted like cobra venom as an amboceptor uniting with the endocomplements of the erythrocytes. The hæmolytic effect was not affected by heat.

Mr. W. R. WILLIAMS read a paper entitled "What is Jensen's Tumour?" He said that the mountain of Imperial cancer research in labour had brought forth a mouse and this mouse had a tumour which was "Jensen's tumour." It was Moran, in 1891, who first discovered this so called cancer and subjected the malady to experimental tests. Jensen did little more than to repeat, extend, and popularise Moran's discoveries which had been forgotten in the intervening decennium, and subsequent authors only said ditto to Jensen. What was the real nature of this so called cancer? The great mistake of those who had so prematurely identified "Jensen's tumour" with cancer was that in making their diagnosis they had placed far too much reliance on histological appearances which had so often proved fallacious and far too little on the *ensemble* of the indications available for diagnostic purposes. Reference was made to previous fallacies of this kind, especially to coccidial disease of the rabbit's liver, contagious venereal tumours in dogs, &c. Specimens of the latter malady had formerly been exhibited to that society and generally accepted as cancer. Now that this fallacy had been so recently exploded, it was disappointing to

find the experimentalists again lapsing into the same kind of error. Atypical epithelial ingrowths and other quasi-malignant histological appearances were of common occurrence in many non-cancerous morbid conditions—e.g., erosion of the os uteri, blastomycotic dermatitis, &c. In this category "Jensen's tumour" would eventually find its acknowledged resting place. "Jensen's tumour" differed *in toto* from cancer in that it was highly contagious and prone to originate epidemics, was readily inoculable in other mice, and often underwent spontaneous cure. In the course of artificial transmission it often changed its type. The tumour was circumscribed and enucleable, did not impart cancerous properties to the tissues of the host, and caused no cachexia. In all of these vitally important respects, which were crucial for diagnostic purposes, "Jensen's tumour" was totally unlike every form of human cancer; but in these and in other respects it closely resembled the contagious venereal tumours of dogs, which had formerly been mistaken for cancer. Regarded as cancer "Jensen's tumour" was a mere bogey, one of a long series of such which indicated nothing but the prepossession of the moment. Recent experimental cancer research was a medley of "chaos, clouds, and tongues," in which there was neither light nor leading. Therefore, in dealing with matters of this kind they must never forget Cousin's luminous dictum: "La critique est la vie de la science."—Dr. W. S. LAZARUS-BARLOW said that in the main he agreed with the view expressed by Mr. Williams. It was not a fact, however, that the contagion of these Jensen's tumours was great and even when transplanted the chances against them growing and becoming disseminated were small. Direct infection of other mice in the same cage was also small. The cachexia produced by cancer was a very marked clinical feature and this was entirely wanting in mice affected with Jensen's tumour. The recent experiments of Ehrlich and Apalant on mice, however, demonstrated the presence of a tumour which had all the appearances and characters of a cancer.

Dr. F. SHERWILL DAWE showed specimens from a case of Fœtal Bone Disease, probably Chondro-dystrophia Fœtalis Hyperplastica. The child lived 17 days after birth but the condition described was present at birth. There were bony masses in the regions of the tuberosities and trochanters, bowing of the fibulæ and tibiæ, and a double bead on the ribs; the bones of the lower extremities were fractured during birth. Sections of the beads on a rib showed a condition very similar to that in the bead of a rickety rib. The viscera were normal. The clinical signs of achondroplasia were absent. The mother was healthy.

Mr. EDRED M. CORNER read a paper entitled "A Contribution to the Pathology of the Sphincters in Cranial and Spinal Injuries." The paper was based on a series of over 100 observations made at St. Thomas's Hospital in 1900. The first part discussed the conditions of the bladder and rectum in the non-paralytic and the paralytic states. In the second part Mr. Corner stated what he found in cases of concussion of the brain, fractures of the vault and base of the skull, and compression of the brain. The more severe the injury the more frequently were the sphincters found to be affected. In concussion they were found to be affected in 23 per cent. of cases severe enough to demand admission to the hospital; in fractures of the vault of the skull, 60 per cent.; in fractures of the base, 61 per cent.; and in compression, 100 per cent. In the third section he discussed the conditions in which he found the sphincters in spinal injuries under the headings of spinal concussion, supra-lumbar and lumbar lesions of the cord, according as to the relation of the lesion to the lumbar centres. The fourth part was in the main devoted to the findings of physiologists of the respective influences of the lumbar and sacral nerve supplies upon the bladder and rectum. The involvement of one of these sets of nerves by injury or disease had never been recorded. So that clinically this section was at present more theoretical than practical. Yet if the actions of these two nerve supplies were understood there should be little difficulty in recognising the condition clinically.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Exhibition of Specimens.—Cryoscopy.

A MEETING of this section was held on Oct. 26th, Dr. ARTHUR H. BENSON being in the chair.

Dr. HENRY C. EARL exhibited a pancreas, an omentum, and a portion of mesentery from a case of Pancreatitis. The two last showed well-marked and extensive fat necrosis.

Dr. W. G. HARVEY also exhibited specimens of Pancreatitis and stated that in his case the patient, aged about 60 years, and a fairly stout man, had been complaining of vague pains in the abdomen for four or five days before coming into hospital. He had been drinking heavily and one morning on going into a public house fell unconscious and was taken to the Adelaide Hospital. On admission he was quite unconscious and breathing heavily. He died in a few minutes. The necropsy showed the presence of fat necrosis over the abdominal and mesenteric fat. The pancreas was enlarged, swollen, dark, friable, and on section showed several large hæmorrhages; the gall-bladder was somewhat distended but there were no gall-stones. Microscopically the pancreas showed necrotic and hæmorrhagic areas. He had not been able to make a complete bacteriological examination. He had stained a section by Gram's method but found no organisms.

Mr. G. JAMESON JOHNSTON detailed the history of a Carcinoma of the Breast, with secondary growth in the humerus.—Professor E. J. MCWEENEY said that while as a rule he was able to say at once whether or not a breast tumour sent for examination was a cancer, occasionally a difficult case would crop up like the one described by Mr. Johnston. He recounted in detail a case exhibiting characteristics which at first sight appeared to be cancer but which turned out to be a case of interstitial mastitis. He mentioned the case as an example of the difficulty sometimes met with in cases of tumours of the breast.

Dr. W. BOXWELL exhibited a Heart showing well-marked Tricuspid Stenosis, together with lesions of the mitral and aortic valves.

Mr. K. E. L. G. GUNN read a short note on Cryoscopic Work done during the past two years, showing that the information obtained from this method was similar to that obtained by a quantitative analysis of the urine, or the blood, or the accurate reading of the specific gravity, provided the fluid had been deprived of proteids. The method of finding the freezing point was demonstrated by means of Beckmann's apparatus. Mr. Gunn believed that slight alterations in the freezing point of the blood were of far greater importance than considerable alterations in the molecular concentration of the urine. In no case in which normal urine readings were obtained did the kidney show any functional deficiency after the removal of the other kidney. On the other hand, in two or three cases patients with only one kidney remained healthy although the urine showed a molecular concentration considerably below normal.—Professor MCWEENEY said that he had not been convinced either by his reading on the subject or by the communication just made, that the diagnostic advantages to be derived from cryoscopy of the urine would compensate a hard-worked pathologist for the labour involved in working the apparatus which had been exhibited. It was acknowledged that the lowering of the freezing point was a valuable indication of molecular concentration; but he failed to see the necessity for the method of cryoscopy when it was always possible for a man—who was clever and patient enough to carry out cryoscopy—to determine accurately the total solids after removal of the colloid constituents or to take the specific gravity accurately. He considered that simple methods, such as the taking of the specific gravity, gave just as useful results; and he was glad that the knowledge which he had gained from Mr. Gunn's authoritative statement had not imposed on him any change in his personal practice.—Mr. GUNN, in reply, said that the time and labour involved in cryoscopy were not very great; two or three readings of half a dozen samples could be taken in an hour; and it was, of course, necessary that the mean of two or three should be taken. He did not deny that the specific gravity gave an equally good demonstration of the molecular concentration, but in that method all the albumin in the urine had to be got rid of.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 2nd, Dr. J. T. Conner, the President, being in the chair.—Dr. L. Durno read notes of a case of Acute Hæmorrhagic Pancreatitis in a man, aged 52 years, who gave a history of 18 months' gastric catarrh but of no hæmatemesis or melæna. One morning while strapping up a box he was seized with pain in the abdomen and vomiting. He insisted on taking a 20 miles

railway journey, although in a semi-comatose condition and with the vomiting persisting. In the afternoon he was found lying in bed moribund. He looked yellowish, pale, and pinched, with a pronounced abdominal facies. He kept retching every few minutes and described the feeling of sickness as dreadful. He showed every indication of a pronounced progressive collapse. The bowels had not acted for two days but he passed flatus readily. He complained of intense pain in the epigastrium and there was great tenderness to the upper right of the umbilicus. Abdominal movements were much restricted but percussion gave no help. He gradually sank and died 30 hours after first being seen. Acute hæmorrhagic pancreatitis was diagnosed and at the necropsy the peritoneal cavity contained a considerable quantity of brownish fluid, and in the pancreatic region there was a large, dark, liver-coloured mass of about three times the size of the pancreas, which on section seemed like a large blood clot, with no pancreatic tissue left. In the stomach there was a chronic ulcer of about the size of a sixpence and the mucous membrane showed the usual appearance of a chronic gastric catarrh.—Mr. W. Campbell M'Donnell read notes of a case of Chronic Colitis in a woman, aged 71 years. There had been hæmorrhage from the bowel for several years, and there were constipation, abdominal pain, and great flatulent distension, with very marked coiling. Diarrhœa during many months at the last was nearly constant and the motions were passed involuntarily. She died from heart muscle degeneration and at the necropsy the greater part of the colon was found to be inflamed intensely and distended to a circumference of 13 inches.—Dr. B. G. Morison read notes of a case of Epithelioma of the Lower Lip in a woman, aged 60 years, which had existed for three years. For the first two years it looked like a herpetic patch. It then slightly increased and got a little thicker but was not ulcerated and was considered probably a flat epithelioma. Three weeks ago it was removed and although the microscopic section was not typically malignant, as the epithelial cells invading the deeper tissue were apparently normal, it was considered a suspicious-looking growth on its way to develop into an epithelioma.

GLASGOW SOUTHERN MEDICAL SOCIETY. — A meeting of this society was held on Nov. 1st, Dr. T. K. Monro, the President, being in the chair.—Dr. W. F. Somerville read a paper on the Influence of High-frequency Currents on the Surface Temperature of the Body. Patients undergoing high-frequency treatment had often remarked to him that they "felt warmer" after an application and to determine whether this was real or imaginary he had conducted a number of experiments. It was first noticed that in all patients the surface temperature varied with the individual and the locality, and on different days in the same individual and the same locality. Even the same situations in different limbs, tested at the same time, showed a lack of uniformity in surface temperature. In patients undergoing high-frequency treatment there was during the application a rise of surface temperature ranging from 1·4° to 17·4°, the rise varying according to (1) the individual, (2) the locality chosen, (3) the milliampèrage, and (4) the method of application. The greatest rise of temperature invariably took place on the flexor surface of the forearms, the rise in the lower limbs not being so marked or so rapid. When a thermometer was placed on the forearm and another on the lower limb the rise on the forearm was greatly in excess of that on the lower limb. After the current was switched off there was usually a fall in temperature but it seldom returned to the original level within the next 15 minutes. In one case (a medical man) the temperature during an 11 minutes' application rose to 103° on the forearm, an increase of 17·4°. The patient was unable to bear the current any longer, not so much on account of the heat in the arm as because the whole limb swelled to such an extent, apparently from dilatation of the deeper vessels, that the tension of the bandages and elastic bands holding the thermometers *in situ* became unbearable. Immediately on switching off the current relief of tension followed. The rise of temperature was thought to be due undoubtedly to the action of high-frequency currents on the vaso-motor system permitting of increased peripheral circulation due to a dilatation of the deeper as well as of the superficial vessels. This explained why the blood pressure, as shown by the sphygmometer, fell. Hence they might with greater confidence employ these currents when treating patients of advanced years, when, perhaps, the heart muscle was feeble. Also, with an increased peripheral circulation there must be a withdrawal of blood from the brain and abdominal organs, so that the circulation as a whole was temporarily aided.

SOCIETY OF ANÆSTHETISTS.—The first ordinary meeting of the session of this society was held on Nov. 2nd. —Dr. J. F. W. Silk opened a discussion on Anæsthesia in Abnormal and Constrained Positions. He dealt with the matter as it referred to the positions (1) supine; (2) lateral; (3) prone; and (4) sitting. Dr. Silk laid much stress upon the occurrence of various paralyses after long continuance of certain positions, upon the choice of position in the operation for adenoids, where he regarded the position as obsolete which required hyperextension of the neck, and upon the Trendelenburg position.—Dr. R. J. Probyn-Williams spoke of position in cases of operation upon the kidney and recommended the use of Carter Braine's arm-rest for these cases.—Mr. H. S. Barwell spoke of the measures necessary for preventing the entry of blood into the larynx in operations upon the nose and throat; he used the side position in these cases. Some surgeons were now using the Trendelenburg position in certain operations upon the throat. There was one operation, that of the removal of ossicles from the ear, which was, he thought, always best performed with the patient in the sitting position.—Mr. Arthur Edmunds believed that the danger of blood entering the air passages was largely a bogey. In cases of operation on the tongue he thought that position was much less important than splitting the cheek so as to obtain the clearest view of, and easiest access to, the field of operation. He related three cases of post-anæsthetic paralysis, an epidemic of which had followed the introduction of a new metal operating table at one hospital with which he was connected. Mr. Edmunds considered these paralyses the most formidable consequence of anæsthesia.—Mr. Russell J. Howard described similar cases of paralysis and regarded the bystanders as sometimes the cause.—Dr. H. Percy Noble did not consider the anæsthetist in any way responsible for such paralyses; at the same time the patient's arms should, whenever possible, lie along his side on the table.—Dr. Ll. Powell alluded to the inconvenience of administering anæsthetics for the operation of laminectomy, when the patient's face was often practically buried in the table. Some bridge position should be devised in which the anæsthetist might place himself below the patient, in much the same way as a chauffeur underneath a broken-down motor-car.—Dr. Vivian B. Orr and Mr. L. Kirkby Thomas alluded to the moving of patients when anæsthetised and to the question of paralysis from the "arms-up" position.

Reviews and Notices of Books.

Second Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. Khartoum: Department of Education, Soudan Government. 1906. Pp. 255, with 21 plates and 106 illustrations in the text.

THIS elaborate report, published under the direction of Dr. Andrew Balfour, is a striking testimony to the energy shown by the officials of the Research Laboratories at Khartoum. That this energy is seconded by the authorities, who have concurred in the suggestions made to them by the director, as he ackowledges in various footnotes appended to his own report, is a further matter for congratulation. Too often we hear of scientific work being hampered or ignored by officialdom; this is most emphatically not the case in Khartoum. Indeed, surrounded as the inhabitants of that part of the world are by disease-carrying flies, and by natural enemies in abundance that creep and crawl, it is plain that zoology and prophylactic medicine must figure largely in the calculations of those who are responsible for colonial expenditure. What principally and at first impresses the reader in scanning the pages of this report is the restless industry of all concerned in its production. Careful investigations into germ-carrying flies, blood parasites, and the analysis of water are supplemented by many observations upon all kinds of matters that concern public health. The travelling pathologist, Mr. Sheffield Neave, after traversing the neighbourhood, has presented us with a mass of information upon all matters that came within his view. There are valuable notes

upon several diseases such as leprosy; an account of the distribution of "the fly"—i.e., Glossina palpalis; anthropometrical measurements; a description of medical treatment; an account of the collecting of slides, with blood films to be examined at leisure at home for parasites; and the collecting of plants, especially those used for medical purposes among the natives, besides a variety of other matter.

The chemical laboratory contributes 40 pages of concentrated matter to the report which also deals with a variety of subjects. Of local economic importance is the chapter on the milk-supply. The guileless native has apparently benefited by civilisation and taken to watering his milk. But fortunately, "once started on this apparently royal road to fortune, the native milkseller could see no reason for moderation in his pace," and thus the practice is easily nipped in the bud. Of greater importance, that is, to the world at large, are the analysis and the notes upon Gum Arabic. This gum is exuded from a number of different species of acacia and Dr. Beam quotes from the former director of forests, Mr. C. E. Muriel, the method of procedure adopted in the extraction and preparation of the gum by the natives. Some valuable hints are also given by the same gentleman as to the artificial sowing of trees and the conditions which favour the production of the gum, among which is moderate dryness of the soil. Quite recently the formation of the gum has been shown to depend upon a particular microbe, bacterium acaciæ, with which it is clear that the trees could be properly infected by means of artificial lesions.

A curious piece of information, given by the chemist Mr. Walter Bean, concerns a native earth termed "tureba" which is used by the natives as a remedy for syphilis. It had been held that a curative effect, profoundly believed in locally, was due to the presence of mercury, but analysis showed no trace of this metal except in one case where it was suspected that mercury had been added. The only real effect which the drinking of a solution of this earth would have would be purging due to the large amount of saline matters present. Dr. Beam thinks that "the average native does not require more than this to convince him of the potency of his medicine." Besides diluting milk and selling quack medicines the native of the Soudan does a profitable business in "benga," a magic powder used in divination. This substance was subjected to a dispassionate examination at the Khartoum laboratory and was proved to be no more than a red oxide of iron mingled with fine sand. But if an unfavourable omen is desired the chicken to be experimented with is probably fed with an adulterated benga to which, in fact, some poison had been added.

The greater part of the volume is, however, occupied by accounts of various noxious insects found in the country. This work has been largely done by Mr. E. E. Austen of the British Museum and by Mr. F. V. Theobald, also well known to the scientific world as an entomologist. These memoirs have the very great advantage of being illustrated by plates copied from Mr. Terzi's beautiful drawings of Diptera. In this department of animal life Khartoum is, as might be expected, rich, and several new species are described in this report for the first time. The death-conveying flies of the district are reinforced for their attacks upon man by a variety of insects which do less, but still considerable, harm. The Soudan nourishes a kind of bee which is unlike many other bees in that it cannot sting. But this comparative inoffensiveness is well made up for by an insatiable curiosity which leads the insects to explore all the cavities of the face and thus to cause much irritation; moreover, though the bee does not sting it has jaws powerful enough to bite with. A most horrible creature is the "Congo floor maggot." This, which is the larva of a fly, lives in the native huts and hides itself during the day in crevices. After dark the maggots crawl forth and suck the blood of the human inhabitants of the huts, returning to their hiding places at dawn.

A lengthy article deals with the important subject of Trypanosomiasis in the Anglo-Egyptian Soudan. Some of the principal conclusions resulting from the researches described in this paper have already appeared in medical journals in this country. But they are summed up and added to in the section now before us. The cattle of the country suffer from a disease due to a small trypanosome, named by Laveran trypanosoma nanum. This parasite appears to be peculiar to bovines. The organism has been traced to tsetse flies and the area of the disease is shown to be commensurate with the distributional areas of the flies. The biting fly stomoxys is shown to be not a carrier of the trypanosoma. It is very noteworthy that the cattle disease due to trypanosoma nanum is not invariably fatal; whereas the trypanosomiasis of mules, which is caused by another species—viz., trypanosoma dimorphum, is always "acute and fatal." If the parasite be passed through other animals for a considerable period its virulence is subsequently, and perhaps thereby, greatly increased; but cattle are not affected by it; though, as the author points out, the conclusion, based upon one case only, requires further study.

It will be gathered from the few details which we are able to give that this report is full of valuable fact and experiment; it is to be hoped—and there is fortunately every reason to expect—that succeeding years will witness a fresh output of scientific discovery in this part of the world.

Manual of Aseptic Surgery. By E. A. R. NEWMAN, M.D. Cantab., M.R.C.S. Eng., Major, I.M.S. London: W. Thacker and Co.; Calcutta: Thacker, Spink and Co. 1906. Pp. 223. Price 5*s.* net.

THIS work has been written apparently for use in India but its teaching is equally applicable to other parts of the world. It commences with an interesting historical account of the introduction of Listerism and its lineal descendant asepticism, and the author shows clearly what we have always maintained—that the latter is merely a modification of the former, produced by natural evolution and not an opposed or antagonistic system of practice. The arrangements required in modern surgical operations are detailed and we find little with which we disagree. The book should prove of great use to all who wish to carry out thoroughly modern methods in operations and especially can we commend it to those who became qualified before antiseptic and aseptic methods were in use. Two spelling faults are probably attributable to the printer—namely, "pyœmia" and "empyœma."

Electricity in Medicine. By Dr. W. H. GUILLEMINOT (Paris). Translated by W. DEANE BUTCHER, M.R.C.S. Eng., Surgeon to the London Skin Hospital. London: Rebman, Limited. 1906. Pp. 588. Price 17*s.* net.

IN reviewing this book in its French edition in a former issue[1] we said that we thought that an English translation would well repay any trouble that it entailed. We are glad to see by the volume before us that this has been done and on reading it we are bound to admire the careful and conscientious way in which the translator has done his share of the work. To quote from the translator's preface: "It has been well said that the man who has learned two languages possesses two souls. Still more truly may it be asserted, that he who has studied a science from the different points of view of two schools of thought possesses a double understanding of his subject." In this volume we find the French school of thought—one

[1] THE LANCET, Jan. 28th, 1905, p. 233.

to which we are already greatly indebted—so far as it bears on the application of electricity in the purposes of medicine, presented in a way so clear and concise that truly he who reads may learn and easily understand. We consider that Mr. Deane Butcher has rendered a real service to the cause of electro-therapeutics in Great, and Greater, Britain by carrying out the translation of this work which, we may add, should be in the hands of everyone who is interested in the employment of electricity in medicine.

LIBRARY TABLE.

Diseases of Women. By J. BLAND-SUTTON, F.R.C.S. Eng., and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin. Fifth edition. With 129 illustrations. London: Rebman, Limited. 1906. Pp. 536. Price 11*s.*—As only two years have elapsed since the appearance of the last edition of this book not much revision has been necessary. The sections on Chorion Epithelioma, Extra-uterine Gestation, and Tumours of the Ovary have, however, been considerably added to. The relationship of hydatidiform moles to chorion epithelioma is briefly discussed and the opinion is expressed that any distinction between the benign and the malignant hydatidiform mole is not supported by microscopic evidence. The most important addition to the section on extra-uterine gestation is to be found in the section on ovarian pregnancy. A short account is also given of Professor Leopold's rare case of utero-abdominal pregnancy. In considering carcinoma of the ovary attention is directed to Schlagenhaufer's important paper on the relation between cancer in the other abdominal viscera and secondary growths in the ovaries. Of 79 cases collected by him, in 61 cases the primary focus was in the stomach, in ten in the intestine, and in seven in the gall-bladder or its ducts. The book maintains its main characters and, as we have said, it has not been found necessary to make any changes in this edition.

The American Mosquito Extermination Society: Year-book for 1904-1905, containing the Proceedings of the Second Anti-Mosquito Convention held in New York, December, 1904. Edited by H. C. WEEKS and E. H. HALL. New York. 1906. Pp. 116.—This report contains most interesting information concerning the mosquito and the methods to be employed to counteract its attacks. We find in it a discussion on larvae-destroying fish, such as minnows and goldfish, and a record of the mosquito work at Panama where amongst other measures all water barrels and cisterns were covered with wire gauze and the houses were fumigated with pyrethrum. After the institution of these measures not a single death occurred from malaria and there were only four cases of yellow fever. The anatomy of the mosquito is well described by Mr. E. Porter Felt, the New York State entomologist, and is illustrated by some excellent plates. Dr. G. Kohnke enters fully into the bionomics of the mosquito and the methods by which the insect transmits the diseases of malarial fever and yellow fever.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. The Anatomy and Histology of Ticks. By S. R. CHRISTOPHERS, M.B. Vict., Captain I.M.S. New series, No. 23. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India. 1906. Pp. 55 and six plates. Price Rs.3 or 4*s.* 6*d.*—The author has written this interesting account of the anatomy and histology of ticks, as although their external characters have, especially of late, received a good deal of attention from observers, such has not been the case as regards their internal structure. It was eminently desirable that such an exposition should be made when we consider that the existence of a developmental cycle of piroplasma, for instance, has almost been proved in the tick, in addition to the probability that some spirochætæ of the blood of man and animals also undergo developmental changes in the tick. The author has added to observations relating to the structure of ticks some others upon their life processes and upon their embryology. The fact that ticks act as transmitters of disease has been amply demonstrated. Thus Smith and Kilbourne have shown this as regards Texas fever in 1893; Koch likewise respecting piroplasmoses in cattle; and Lounsbury and Nuttall in dogs. But not only are ticks carriers of the piroplasmata but also of certain spirochætæ both in the lower animals and also in man. "Tick fever" and its relation to spirochætæ in the blood has been the subject of observations by Ross, Milne, Dutton, Todd, and other investigators. The author after entering fully into the bionomics of ticks, describes minutely the general zoological character of these insects in a section which must have entailed a large amount of painstaking labour. He then enters upon the structure of the ovum and the embryology of ticks. The memoir is illustrated by some very beautiful plates.

A Hospital for Children. A Preliminary Report Concerning the Construction of Hospitals for Children presented to the Managers of the Harriet Lane Home for Invalid Children of Baltimore City. By CHARLES P. EMERSON, A.B., M.D. Baltimore: The Friedenwald Company. 1906.—Reports, like Government Blue-books, are not as a rule very attractive reading save to those who for some reason or other are interested in the particular subject with which the reports deal. The report in question is, however, an exception to the general rule, even though it be conceded that anything which concerns the welfare of children ought to be of universal importance. In the summer of 1905 Dr. Emerson was asked to ascertain what were the most recent ideas concerning the construction of hospitals for children and with this object in view he subsequently visited some of the principal children's hospitals in Canada, England, Scotland, France, Belgium, Germany, Austria, Hungary, and Italy. His investigations showed that children's hospitals should be built with special reference to the needs of the patients, and he found that though there was a tendency to build children's wards on the same lines as those adopted for adults, "yet each country furnishes something particularly its own to the plans of a model hospital, something especially which evolves from the national character, as, for instance, the beautiful ward furnishings and hygienic appliances of England; the simple, practical, theoretically good buildings of Northern Germany; the more complicated plans of Austria; and the clever, ingenious devices for the isolation of cases of France." The work consists of 96 pages, including an index, and gives a brief yet useful account of some of the principal children's hospitals in the world, with detailed studies on questions of construction, administration, equipment, and so on. In some instances rough sketches of the plans of buildings are given. The report is well worthy of the attention of architects, of medical men, and of nurses.

ABERDEEN UNIVERSITY CLUB, LONDON.—The forty-sixth half-yearly dinner of this club will be held at the Trocadéro Restaurant, Piccadilly-circus, W., on Wednesday, Nov. 21st, at 7 P.M. Sir Henry Craik, K.C.B., M.A., LL.D., Member of Parliament for the Universities of Aberdeen and Glasgow, will be in the chair. Members desiring to be present should communicate with the honorary secretary, Dr. R. J. Collie, 25, Porchester-terrace, W., not later than Nov. 17th.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 10, 1906.

Limitation of English Families.

IN reviewing a valuable work on Natality and Fecundity[1] in THE LANCET of Oct. 13th we took occasion to discuss the general question of the recent continuous decline in the productivity of the population of these islands—a decline which we characterised as a national calamity seriously threatening the future welfare of our race. This question has of late attained considerable prominence in the daily press, public interest in the matter being in particular stimulated by two remarkable articles on "Physical Degeneracy, or Race Suicide" in the *Times* of Oct. 11th and 16th from the pen of Mr. SIDNEY WEBB, in which the reasons for the decline in the birth-rate were handled with great adroitness and with a degree of earnestness that has provoked an interesting controversy in that journal and elsewhere, to which some statisticians and economists of note have contributed.

Mr. WEBB adduces evidence, which he calls "irresistible in its cumulative force," to show that the recent decline in the birth-rate is depriving this country of at least one-fifth part of every year's "normal crop of babies"—a decline which is not accounted for by any alteration in the age, sex, or marital condition of the population, by any refusal or postponement of marriage, or by any of the effects of residence in town or of physical deterioration of sections of the community. We accept as a fact the statement that a falling off in the English rate of production has actually occurred in recent years, but as regards the section or sections of the community experiencing this deficiency there is much difference of opinion. It has been suggested by some German authorities that the fall in the birth-rate is the result of what they term "progressive urbanisation" but English statistics do not support this contention. In order to avoid fallacy Mr. WEBB counsels us to accept the recent birth statistics of Dr. A. NEWSHOLME and Dr. T. H. STEVENSON, which have been laboriously corrected for differences of age, sex, and marital condition. From this source we learn that although the birth-rates of some of the large industrial towns of Lancashire and Yorkshire have fallen by about a third part within the last ten years, nevertheless there are several entirely rural counties in which the fall has been scarcely less than this. Again, Mr. WEBB seeks to eliminate insanitary conditions from the list of causes of decrease. If, he says, it was the unhealthy environment of our great towns that was causing a reduction in the number of births, we might expect to find Liverpool, Salford, Manchester, and Glasgow heading the list. As a matter of fact, however, the corrected birth-rate between 1881 and 1901 fell off proportionately less in these cities than in any other towns, and actually less in proportion than in all but six of the English counties. Mr. WEBB therefore argues that a decline in the birth-rate, which does not appear at all in Dublin, which appears much less in Liverpool, Manchester, and Salford than in Brighton, and which appears far more in Westmorland, Rutland, Devon, and Cornwall, can hardly be due to "urbanisation." The opinion is expressed by Mr. WEBB that the decline in the birth-rate is greater among the thrifty sections of the population than in the community at large and he adduces in support of that opinion certain statistics from the Hearts of Oak Friendly Society which contains more than a quarter of a million male adult members. Admission to membership of this society is limited to men in receipt of at least £1 4*s.* per week, a figure which excludes the unskilled worker and the agricultural labourer, and generally the lowest grade of skilled artisan. Amongst the provisions of this society is the "lying-in benefit" which secures a payment of £1 10*s.* for each confinement of a member's wife. From 1866 to 1880 the proportion of lying-in claims to membership rose slowly from 2176 to 2472 per 10,000. From 1881 to 1904 it continuously declined, reaching in the latter year 1165 per 10,000. In this population of 1,250,000 persons in all, distinguished from the rest only by the characteristic of thrift, the birth-rate has fallen off in the last decade by no less than 46 per cent.—a decline nearly three times as great as that of the English community generally. The records of a smaller society, the Royal Standard Benefit Society, similarly constituted, show almost identical results. If the members of these two societies had yielded proportionally as many births in 1904 as the members of 1880 had done in that year, there would have been born to them nearly 70,000 babies instead of the 32,000 who actually saw the light. If the birth-rate in these 280,000 families of comparatively prosperous artisans had fallen in only the same degree as that of England and Wales generally, there would have been born 50,000 babies instead of 32,000. As regards this point, Mr. WEBB is convinced that the reader of the foregoing statements must accept the conclusion that the falling off of the birth rate, which has during the last 20 years deprived England and Wales of some 200,000 babies a year, is the result of deliberate intention on the part of the parents. The persistence and universality of the fall; the absence of any discoverable relation to unhealthy conditions, mental development, or physical deterioration; the remarkable fact that the fall has been greatest where it is known widely to be desired, the evidence that it accompanies, not extreme poverty, but social well-being, and that it is exceptionally marked where there are foresight and thrift—all this points in the same direction.

In his second article Mr. WEBB seeks to justify his inference from the foregoing facts, which is this—that there exists among the majority of our people a volitional regulation of the marriage state, and that to this cause is due the decline of the birth-rate which is depriving us of at least one-fifth of every year's "normal crop of babies." He gives particulars of a voluntary census undertaken by the Fabian Society with a view to ascertain to what extent the practice prevails in this country. Mr. WEBB himself admits the inadequacy of this census to afford by

[1] Natality and Fecundity, by C. J. Lewis, D.Sc., M.D.Edin., and J. Norman Lewis, F.I.A. Edinburgh: Oliver and Boyd. Pp. 170. Price 7*s.* 6*d.* net.

itself proof of a widespread custom but he claims that taken in conjunction with other statistical evidence adduced by him the demonstration is complete. In his judgment the principal, if not the sole, cause of the present decline in the birth-rate is the deliberate practice referred to. This practice prevails, either with the object of limitation of families or else with that of regulating the interval between the births, among a majority of the married people of Great Britain of reproductive age, not only among those above the ranks of labour but practically among all classes, from the agricultural labourer and the artisan up to the professional man and the wealthy property owner. Nor is the practice confined to this country. Statistics indicate that New South Wales and Victoria have already carried it further than we have, whilst New Zealand is not far behind. The same phenomenon is also to be traced in parts of America and in the German Empire. The Roman Catholic population of Ireland and of the British cities, as well as that of Canada and Australia, appear still to be untouched but that of Belgium, Bavaria, and Italy is beginning to follow in the footsteps of France. The fact that almost every country possessing accurate registration is showing a declining birth-rate indicates that the practice is becoming universal. To Mr. WEBB the situation appears to be perilous. He predicts that the vacuum produced by the continually falling birth-rate will not long remain unfilled, exclusion of the alien immigrant being practically impossible. In Great Britain at this moment, when more than half the people are limiting their families, children are being freely born to the Irish Roman Catholics and to the Polish, Russian, and German Jews, on the one hand, and to the thriftless and irresponsible casual labourers and other denizens of our one-roomed tenements on the other. To Dr. KARL PEARSON Mr. WEBB attributes the statement (which the former gentleman repudiates) that "this particular 25 per cent. of our population is producing 50 per cent. of our children." Mr. WEBB believes that this can hardly result in anything but national deterioration or, as an alternative, in the country falling to the Irish or the Jews. Finally, he warns his readers that the ultimate future of these islands may fall to the Chinese!

However, Mr. WEBB declares that the conclusion to be drawn from his investigations is one of hope, not of despair. He argues that if the decline in the birth-rate had been due to physical degeneration we could not have coped with it, but that a deliberate volitional interference can at once be influenced by alteration of economic conditions. He goes on to specify the alterations which he desires with a view of making it easier for people to undertake family responsibilities. Among these he alludes particularly to free medical attendance at parturition, to the gratuitous supply of milk for infants, to the provision of "free meals on demand" for nursing mothers, to the feeding of children at school, to the multiplication of maintenance scholarships for secondary technical education, and also to the extension of tax-supported higher schools at nominal fees, or even free. These alterations—which Mr. WEBB himself admits to be "revolutionary"—are designed to alter the economic incidence of the burden of child-bearing; they would, according to him, leave the way open to the play of the best instincts of mankind—namely, the rearing of healthy children as a prime duty of citizenship. Mr. WEBB'S is a very ingenious statement of the case and his proposed remedies for a great social evil follow directly upon that statement. But when we come to consider the effects of those remedies, in the unlikely event of their being adopted, we are constrained to declare that, in our judgment, the remedies would be worse than the disease. In almost every issue of the *Times* since the appearance of his first article there have appeared criticisms of Mr. WEBB'S proposals which have been censured by the more important contributors to the debate either as Utopian or as definitely futile and injurious. We must range ourselves with his opponents. The unwisdom and, indeed, the impossibility, of Mr. WEBB'S suggested "endowment of motherhood" is, we think, established. His suggested alterations of existing economic conditions we do not condemn because they are definitely socialistic in tendency—we have seen too much good follow the application of doctrines which upon their early enunciation were called socialistic to be betrayed into so crude a way of dismissing the subject; but we think that his views are utterly incompatible with true progress and with the welfare of society. It is necessary that good citizens should have the responsibilities of citizenship.

The Garden City Movement.

MANY members of the medical profession are, we are informed, becoming affiliated to the Garden City Association and it is not surprising that this scheme, which in a way is a far-reaching project in preventive medicine, should possess attractions for medical men. Among the vice-presidents of the Association are Sir WILLIAM CHURCH, Sir LAUDER BRUNTON, Sir WALTER FOSTER, Dr. ROBERT FARQUHARSON, Mr. REGINALD HARRISON, and Professor G. SIMS WOODHEAD; the chairman of the Executive Committee is Dr. R. O. MOON, the honorary treasurer is Dr. ARTHUR JAMES, and Dr. FRANCIS FREMANTLE, the medical officer of health of Hertfordshire, is a member of the council. The movement, the various developments of which have from time to time been alluded to in our columns, may now be said to have been established on an international basis within the last few days, for the Garden City Association has been awarded the gold medal for its exhibit at the Milan Exhibition. It has recently put forward a programme advocating the following six things:—

I. The building of new towns in country districts on well-thought-out principles, designed from the outset to secure the healthful and adequate housing of its whole population, so that the land shall never become overcrowded with houses, while the town, when built, shall be permanently surrounded by a wide belt of agricultural and park lands.

II. The creation of garden suburbs on similar principles for the immediate relief of existing towns.

III. The building of garden villages for properly housing the working classes near their work.

IV. The acquisition of open spaces and the improvement of existing towns and villages on garden city principles.

V. The removal of factories from congested areas to country districts.

VI. The provision of small holdings in proximity to

towns, together with measures for the disposal of agricultural produce to the advantage of the home producer and consumer.

With all of these objects the medical man, as sanitarian, must be in sympathy, though the economic difficulties may impede their realisation.

The association can now furnish examples of its work in three different directions, the garden city at Letchworth being a type of the new town that it is desired to construct, the developments at Hampstead forming a typical garden suburb, and Bournville and Port Sunlight being examples of the garden village for housing an industrial community. Many of our readers may have seen these places; if so they will probably endorse our view that the six definite objects of the association ought to have the support of the medical profession. So great is the overcrowding in all old towns, so inadequate is the available housing accommodation for the working classes in both town and country, and so enormous is the cost of land in large towns, that in the opinion of many practical people it is well-nigh impossible to produce any appreciable effect upon the evils of overcrowding and insanitary housing except by such a drastic measure as building on a large scale in country districts. Good agricultural land can now be purchased at moderate prices in sufficiently large quantities for the building of whole towns, and the view of the Garden City Association is that such land should be purchased now, and as a whole, by some body which would be in the position of trustees for the future inhabitants. On land so acquired comprehensive construction with an eye to present needs, sanitary and æsthetic alike, could be undertaken, while the necessities of future development could be considered in the scheme. The first Garden City Company proposes to be such a body of trustees, and we understand that the dividends to shareholders will be limited in such a way as to insure that the collectively earned increment, which should arise from the conversion of rural into town land, will accrue for the benefit of the residents. If all profits over and above the limited dividend were spent on the settlement the burden both of rent and rates ought soon to be lightened appreciably. But the association, before committing itself to any such scheme definitely, will be wise if it limits its aspirations as well as its liabilities and its dividends. Coöperative and municipal ownership has before now produced losses rather than profits

The interdependence of different classes of society makes it necessary that every such new and model town as the Garden City Association designs should be planned to suit the requirements of all sections of the community, and if this can be managed successfully possibilities for the general welfare of the population will be opened up which have hitherto been thought to be unattainable. Workmen will be able to live near their work and also near good air and green fields, while factories will not defile the residential quarters in an unnecessary and capricious manner. All sections will be benefited in some manner but none so greatly as the children of the poor, who in garden cities will be able to live in healthy cottages with good gardens and to grow up under conditions different from those which obtain in city slums. The association is but in its infancy, and at present the realisation of its ambitious programme depends upon the enthusiastic work of a few. The promoters, however, can already show that their efforts have borne fruit; they have earned, we consider, the right to say publicly that if some of the enormous sums now spent every year on palliative measures could be directed to their scheme both public benefit and public economy would result.

Intestinal Antiseptics.

THE subject of intestinal antiseptics is both complex and important because either purgation or stimulation of natural secretion contributes indirectly to the removal or destruction of micro-organisms in addition to any restraining or germicidal power which particular drugs may directly exert. This is continually illustrated by the rapid occurrence of fermentation and fœtor in the intestinal contents when the gall ducts are obstructed, and the speedy disappearance of these features when bile secretion is restored. Again, the beneficial results of effective purgation apart from any question of antiseptics are well displayed in the use of caster oil or a simple enema, where secondary toxæmia or infective processes are associated with defective evacuation of the colon. Owing to the extent and active absorbing properties of the digestive tract a considerable limitation is placed upon the use of antiseptics in this direction. Many agents of the kind, which have proved effective in other circumstances, could either not be administered in sufficient doses under the peculiar conditions of dilution that obtain, or must be prescribed altogether on account of their poisonous properties. Added to this, the destructive influence of the digestive juices with alternation of acid and alkaline reaction, and the quantity of organic matter present, preclude the effective action of the less stable antiseptics, not to mention the objections that might be raised to such as would interfere with normal digestive processes, promote undue evolution of gas, be liable to give rise to undesirable bye products, or become unduly absorbed in the presence of alimentary substances, as is thymol in connexion with fat or alcohol. Bearing these considerations in mind, it is evident that we can only employ for purposes of intestinal antisepsis such agents as possess powerful germicidal properties and are reasonably stable in the presence of organic matter and the digestive juices without exerting any toxic influence on the human system.

If we may draw any inference from the analogy of growing plants, it may be recalled that such are unable to derive any nutriment from earth completely sterilised by heat and will not germinate or grow in it, but, on the other hand, will flourish in decaying vegetable or animal matter, provided it does not contain chemical or living agents which are inimical or in too great proportion. It may, perhaps, be inferred from this analogy, as well as from the normal condition of the intestinal contents as regards micro-organisms, that it is in conditions in which they are present in excess, develop morbid propensities of type, or are represented in formidable proportion and of specifically pathogenic nature, that the aid of antiseptics is invoked. Apart from what may be present in the ingesta, there is a plentiful supply of micro-organisms of varied and often noxious character in the mouth, the nares, and the pharynx which constantly obtain access to the intestinal tract, yet for the most part no evil consequences result-

This immunity may fairly be attributed to the protective influence of gastric digestion, a small percentage of hydrochloric acid being sufficient to destroy most of the organisms, though variations in quantity occur in association with general and local departures from health, so that the protection afforded is not absolute. This is proved by the occurrence of tuberculous and typhoid ulceration in the intestines and occasionally even in the stomach itself. Of initial importance in connexion with the question of intestinal sepsis, therefore, is the condition of the mouth which is liable to become the incubator of an excess of micro-organisms and those of a baneful nature. The attention recently directed to pyorrhœa alveolaris and other septic states as the possible cause of many complaints, whether of local or general distribution, such as gastric ulcer, appendicitis, colitis, and even pernicious anæmia and osteo-arthritis, has not yet resulted in any definite advance in knowledge beyond that directed to the remedy of the oral complaints themselves. The intestinal antiseptics of oldest standing and greatest trustworthiness are doubtless mercurial preparations, such as the finely divided metal in blue pill or grey powder. The mercurous and mercuric chlorides and iodides, again, have proved of inestimable value in such bacterial infections as cholera and infantile diarrhœa, as well as in many less specifically defined disorders of the alimentary tract, both of an acute and subacute character. Next in order of general use, especially in the more chronic affections, would come the salts of bismuth which are slower and more prolonged in action and involve greater dosage. Among the recent advances in the use of this series must be noted the strikingly successful treatment of that obstinate complaint, ulcerative colitis, by thrice repeated doses of from one to four drachms of the subnitrate for three or four days. Other preparations of bismuth such as the salicylate, subgallate, naphthol- and phenol-bismuth, and bismutose (a compound of bismuth and albumin specially suitable for children), are particularly adapted, in doses of 30 grains or less to the treatment of acute forms of gastric and intestinal catarrh, commonly met with in this country associated with an inflammatory state of the mucous membrane. Among the useful antiseptics which, owing to solubility, are specially efficacious for shorter periods and in the upper part of the alimentary tract may be mentioned phenol, sulphocarbolate of sodium, iodic acid, and iodate of calcium, in doses of from one to five grains. All are in fairly constant use in various forms of gastric disturbance, ulcer, or dilatation with fermentation. In febrile conditions and where the septic indications extend beyond the alimentary canal the various salicylic preparations are most serviceable, such as salicin, salol, salacetol, quinine salicylate, and the combination of salacetol with ichthoform given in cachet. Another group of intestinal antiseptics of slight solubility, and consequently maintaining their action throughout the intestine and for a prolonged period, are naphthalene and its derivatives β-naphthol and benzo-naphthol, which may be administered in doses of from five to ten grains in cachet or suspended in mucilage, maltine, or petroleum emulsion, their sustained effect being of especial value in typhoid or tuberculous ulceration. More recent organic preparations in this connexion, tylmarin and acetozone, have been employed with benefit but hardly with uniform results where employed in a large series of cases. When it is recalled that secondary infections play a more active part in the progress of these lesions than does the primary infection itself, the value of antiseptic agents, if effective, is obvious. In some at least of the instances in which acetozone has been continuously administered there have been practically no fever of hectic type such as usually characterises the third and subsequent weeks of an attack of typhoid fever, an absence of ulcerative complications, and an early convalescence; but more extended experience is required before such a result can be regarded as constant.

Such articles of diet as koumiss and myrtillus (bilberry) confection are regarded on the continent as intestinal antiseptics and are employed as such in typhoid fever and dysentery. They can be taken in quantity but cannot otherwise be compared in potency with those already mentioned. In connexion with dysentery mention must be made of the tincture of monsonia, a South African geranium, used as a remedy by the natives and introduced into this country by Mr. J. MABERLY of Cape Colony, who published an account of it in THE LANCET in 1897,[1] and subsequently a series of 100 cases, both chronic and acute, successfully treated with from one to four drachms every four hours for from two to three days. The same observer contributes a very suggestive article in our present issue relative to the antiseptic action of sulphate of sodium and magnesium in dysentery and typhoid fever, when given in doses short of inducing purgation, a suggestion quite in accord with old practice and modern observation as regards the connexion between intestinal sepsis and metastatic inflammations. It is an interesting fact in connexion with Mr. MABERLY'S suggestion that the dissociation of the base and acid of sodium sulphate may account for its antiseptic action, that sulphuric acid even in very dilute solutions is fatal to both typhoid and cholera bacilli, and that this acid is employed successfully to check diarrhœa.

Annotations.

"Ne quid nimis."

THE DEATH OF MR. GEORGE HERRING.

ON the morning of Nov. 2nd Mr. George Herring died at Putteridge Park, near Luton, and the loss which his fellow citizens have thereby sustained might be described as irreparable, were it not for the hope that the example which he has set will live after him to inspire others. A few years ago the very full tribute which has been paid to his memory in the daily press would have been couched in briefer terms, for it was only of late years that the method adopted by him in his almsgiving compelled attention to his name and won for him a publicity which he accepted in order to stimulate the generosity of others but which he never sought for its own sake. His splendid liberality, however, to the London hospitals and the conditions subject to which it was displayed, as well as the aid which he was known to give to the Salvation Army, were of a nature to appeal to the imagination of his countrymen, and the fame earned by him as a philanthropist has made everyone familiar to-day with the outline of his career. It would be difficult to name any man among the many generous

[1] THE LANCET, Feb. 6th (p. 338) and 13th (p. 435), 1897.

Englishmen of recent years whose liberality can have had a wider effect, although owing to the circumstances in which it was distributed it came to its recipients without any possible realisation of his personality on their part. Quite recently he placed £100,000 in the hands of the Salvation Army to be employed in General Booth's land settlement scheme and to be repaid in 25 yearly instalments to the King's Hospital Fund. In 1899, and in each of the two following years, he gave £10,000 to the Metropolitan Hospital Sunday Fund, and after that until his death he followed the practice, suggested perhaps by the sporting instincts developed in his younger days, of pledging himself to add to the amount collected in places of worship and in the City a sum equal to one-fourth of its total. In this way we find that by his donations to the Metropolitan Hospital Sunday Fund alone, and without reckoning the present year, the suffering poor in the London hospitals have benefited at the hands of Mr. Herring to the extent of more than £78 000. Only in one year—1905—has the whole collection of the Fund, including his contribution, exceeded this amount. Those who care to attempt the task can take the average cost of maintaining a bed in the wards of a hospital for a year and the approximate number of patients who will occupy it during that period as the basis of their calculation, and when they have arrived at a conclusion to be expressed in figures may then embark upon a computation not so easily reduced to definite terms. They may, in short, endeavour to picture vaguely what the sum named has carried with it in pain alleviated, in the restoration of health to the worker, in the chance of life given when hope lay only in treatment far beyond the means of the sufferer to provide. Those who follow the train of thought which we have suggested above may speculate further as to how many inmates of hospitals maintained in them by Mr. Herring returned to health and strength saved by an operation for disease similar to that from which their benefactor sank and died. In his case the timely application of the surgeon's skill resulting in prolonged life and usefulness would indeed have come as an appropriate return for the benefits which he helped to provide for his fellow men, but the hold which the disease had gained upon a man of advanced age rendered all efforts vain. It has been stated that he was in his 74th year, but this does not appear to be a matter of certainty. In 1856, when he gave evidence at the trial of Palmer for the murder of Mr. Cook at Rugeley, Mr. Herring described himself as of independent means and such transactions in connexion with racing matters as were mentioned showed that he already dealt in fairly large sums of money. He is believed to have begun life in humble circumstances, so that although he may have only been 22 years of age at the time of the Rugeley tragedy it seems at least probable that he was slightly older. If he was, as has been suggested, marked out by Palmer as a victim a vigorous constitution, coupled with his own prudence and the suspicion with which he already regarded the murderer, seems to have stood him in good stead and to have preserved his life to the benefit of his fellows At the trial he deposed to a violent attack of diarrhœa which came upon him at the time when Mr. Cook was first taken ill. Mr. Herring, Palmer, and Cook were then attending Shrewsbury races, where they stayed for some days at the same hotel, and it was in connexion with betting business in which Cook was concerned that Mr. Herring visited Palmer in London a few days later, and, as he said in the assize court with evident meaning, refused the brandy and water which that unscrupulous villain offered for his refreshment. Few of those who were present at that famous trial can now survive and those who took an active part in it as counsel have passed away, the majority of them having filled distinguished places in their profession. The name of Mr. George Herring has long been disconnected from turf transactions, and he will be remembered chiefly as a philanthropist who helped his fellow men by giving himself and by rousing others to emulate and at the same time to increase his own generosity. Among other philanthropic work with which Mr. Herring was identified was in connexion with the North-West London Hospital, of which he was the treasurer and large benefactor. He built and endowed a Haven of Rest for Gentlefolk brought to poverty through genuine misfortune, and also founded the Twentieth Century Club for working ladies. His interest in the work of the Salvation Army assumed a most practical form in his last moments, for on the day prior to his death he left the organisation by a codicil to his will a large sum of money. After the payment of many such considerable legacies the residue of Mr. Herring's vast estate has been left for the benefit of the Hospital Sunday Fund.

THE METROPOLITAN STREET AMBULANCE ASSOCIATION.

EVERY year supplies an immense total of street accidents, which the busy traffic in the London thoroughfares renders almost inevitable, and it is of the utmost importance that the sufferers should be properly cared for without loss of time. We have on many occasions called attention to the inadequacy of the arrangements for carrying out this obvious public duty but the proverbial inertia of official bodies is difficult to overcome. Sir John Furley was the first to organise any work of this description in the streets of London. The metropolitan corps of the St. John Ambulance Brigade, of which he was one of the founders, was instituted 27 years ago and still continues to render good service in the public interest. Since that time various philanthropic individuals, and notably among them the Hon. F. Dudley Leigh, have endeavoured to arouse general interest in the subject. In 1902 the ambulance subcommittee of the London County Council considered the question and presented a report in behalf of which Sir William J. Collins, chairman of the subcommittee, exerted his influence, but the other members of the council were apathetic and no practical result followed. In January, 1904, the medical profession took the matter in hand and the Metropolitan Street Ambulance Association was formed, with Mr. Reginald Harrison as president, and Dr. Arthur W. James, of 69, Gloucester-terrace, Hyde Park, W., as honorary secretary. The members of this association now include more than 1000, among whom are many of the best known medical men in London. The association endeavours to interest the public generally in this subject. Its principal object is to bring about the establishment in London of an ambulance service the attendants and vehicles of which could be summoned by telephone, so that skilled aid might be quickly brought to any case of accident or sudden illness occurring in the streets or public places, in order that the patient might be forthwith removed in a properly constructed ambulance to his home or to a hospital. This prospect is, however, so far from being realised that at present the only horsed ambulances in London are those provided by the St. John Ambulance Association, a few belonging to certain hospitals, and those employed in the service of the Metropolitan Asylums Board. Hand ambulances and stretchers are placed in a few streets, and there are both wheeled ambulances and stretchers at the police stations, but there is no proper ambulance system, the consequence being that the removal of sick and injured persons in cabs and other unsuitable vehicles, to the manifest danger of the sufferer, is an everyday event. In New York horsed ambulances came into use in 1870; in Liverpool they were first tried in connexion

with street accidents in 1884 and have ever since proved to be invaluable. Horsed ambulances which can be summoned by telephone have also for a long time been available in Birkenhead, Manchester, Newcastle, and other provincial towns. The association recommends that London should be divided into districts or "accident areas," in each of which an ambulance service should be organised, and that the whole arrangements should be under the control of some duly authorised public body. There has never been any doubt as to the utility, and in fact the urgency, of the work to be undertaken, but from the first there has been a difficulty as to which public body or department should exercise control. The association has generally felt that the London County Council is the most appropriate authority for the purpose. A joint deputation accordingly had an interview with the general purposes committee of the London County Council in May, 1904. The deputation was a very influential one, comprising among its members Mr. Reginald Harrison, the President of the association, Sir William S. Church, then President of the Royal College of Physicians of London, Sir Alfred Cooper, Sir Thomas Barlow, Dr. H. D. Rolleston, and Dr. James, the honorary secretary. With the deputation there were also Lieutenant-Colonel Sir R. Temple and Colonel Sir H. C. Perrott, representing the St. John Ambulance Association. Joint deputations from both associations were also received by the police committee of the corporation of the City of London in June, 1904. The movement thus authoritatively started was not allowed to drop. A correspondence relative to street ambulances took place between the London County Council and the Metropolitan Asylums Board,[1] and the Council considered the matter on various occasions during 1905. In December of that year the general purposes committee recommended that two "trial stations" should be established, one at Bridge Wharf, Lambeth, and one near Charing Cross; the finance committee at the same time estimated the expense of this scheme at £5200 for the first year, including £2200 for the initial outlay. The sanction of Parliament had of course to be obtained before this arrangement could be carried into effect and a clause embodying it was therefore inserted in the London County Council (General Powers) Bill, but this was struck out by the select committee. The Bill with some modifications was read a third time in the House of Lords on July 16th and Lord Monkswell then endeavoured to have the ambulance clause reinserted. In this he was supported by Lord Leigh but was opposed by the Earl of Camperdown, the chairman of the committee, who contended that it was impossible to pass a scheme of which no details were given. The matter seems therefore to be at a deadlock so far as the London County Council is concerned but it is understood that the general question will receive further consideration from the Home Office. Is it not about time for "specific performance" to take the place of "further consideration"? All medical men are agreed on public grounds that a proper system of ambulances is required for the London streets and the appearance upon the crowded thoroughfares of the metropolis of motor omnibuses has not decreased the risk of street accidents. We trust that the Home Office will treat the subject as one of urgency.

"GRAPH" PAPER.

WE published last week an interesting letter from Mr. Montague Pitkin on the possible harm to eyesight that might occur from the use of "graph" paper. We are scarcely prepared unconditionally to support our correspondent in this matter. The acquirement of the graphic art, like that of all human attainments, must inevitably be fraught with fatigue. Under proper conditions of lighting, posture, and so on, ordinary "graph" paper is an aid rather than a hindrance. The strain is one of attention more than of the eyes themselves, if the latter are normal in refraction and muscular balance. From the educational point of view it is precisely this factor of attention which it is so important to cultivate. We agree with our correspondent that the squares in the samples which he has sent are too small; they necessitate, or at least encourage, holding the work too close to the eyes, or approximating the eyes to the work. This throws an undue strain upon accommodation and convergence and is liable to induce asthenopia and to favour the production of myopia or squint. We think that the squares should not be less than four square millimetres, and the time devoted to this class of work should be carefully restricted.

[1] THE LANCET, Feb. 11th, 1905, p. 339.

THE SOILING OF THE LOAF.

WE should like to see it made an offence against the law for bakers and others to convey and to deliver bread except in closed baskets; indeed, as a measure of perfection we should prefer to see each loaf inclosed in a separate clean wrapper. Unfortunately, however, there is reason to fear that the plan usually followed of taking the bread to the customers' houses for selection renders this impracticable. In present circumstances our daily bread is exposed freely to risks of pollution and infection. The baker's man invariably carries his basket slung over his back and the loaves can be seen nestling against his coat, thus producing an interchange between the floury surface of the bread and the dirt, and possibly germs, of his coat. The shape of the basket would seem to suggest that it was made for this purpose, for the man cannot carry it in any other way. Sometimes, moreover, a baker's basket is upset and the soiled or mud-bespattered loaves are perhaps wiped with a dirty sleeve or with a handkerchief which common instinct teaches, apart from bacteriological considerations, must always be an objectionable agent for such a purpose. It is difficult to understand why bread should be exempted from the simple precaution of protecting it against contact with filthy things by inclosing it in a properly covered receptacle. It is high time that some reform should take place in this matter. If any one doubts let him but give heed to the baker's man's shoulders as he proceeds on his daily rounds.

THE ABOLITION OF CAPITAL PUNISHMENT.

"THE Latin races," writes an Italian contributor, "seem possessed with a horror of the death penalty, while it is notorious that homicide is far more prevalent among them than among their Teutonic or Scandinavian contemporaries. Forty years ago, in the House of Commons, the question of the abolition of capital punishment was raised and discussed with a statesmanlike thoroughness that has laid it to rest in the United Kingdom ever since, and now that France is preparing to follow the lead of Italy, which abolished the death penalty 30 years ago, the debate in the British Parliament is worth recalling. That debate was made memorable by two interlocutors, John Stuart Mill and Sir George Bowyer, the former with great logical power maintaining that imprisonment for life was a much less humane mode of dealing with the assassin than execution by hanging; the latter arguing with equal force that capital punishment was infinitely more efficacious as a deterrent than any substitute for it proposed in the name of humanity. Sir George Bowyer, a Knight of Malta, had great knowledge of Italy and his illustrations in support of his thesis impressed the House profoundly. A Neapolitan, he said, wanted to kill his wife but was afraid to do it in the Kingdom of the Two Sicilies, where such crimes were still punishable by the

guillotine. In Tuscany, however, thanks to the teaching of Beccaria, the death penalty had long been a thing of the past, so he took his wife to the archduchy and assassinated her there. That and similar illustrations determined the matter, so far as the British Government was concerned, in a non-abolitionist sense, but ten years later the Italian legislature, shortly after its seat had been transferred from Florence to Rome, brought the whole of Italy into line with Tuscany, and, in spite of the powerful reasoning of La Marmora and other statesmen, made the taking of life punishable only by imprisonment for the same. What has been the result? Let Baron Garofalo, the great criminal statistician of Italy, give the answer. Lecturing before an audience presided over by Queen Margherita in Rome, he said that homicides in Italy amounted annually to more than 4000—the number for one year being no fewer than 4389—in other words, as he expressed it: 'An Italian kills an Italian every two hours.' Illustrating his point still further he showed by statistics that, deducting from the European continent the Iberian peninsula, there are, as compared with Italy, fewer murders in that Europe during the twelvemonth than in the Italian kingdom alone. Omitting the reasons he gave for this 'sinister priority'—distrust of the legal tribunals, vendetta, and the like—he hastened to show that there are in Italy 'assassinations' differing in criminality from each other—assassinations attributable to the use of the stiletto or knife carried (illegally) by every Italian and the consequent infliction of blows not intended to be lethal but often having that issue. Youths of either sex, for example, in a fit of jealousy or vicious excitement, will whip out a knife and before they are aware of what they have done will have killed the object of their momentary resentment. On such 'assassins,' of course, a less summary penalty would be inflicted than on the deliberate murderer whose act is the outcome of a carefully matured plan carried out with every precaution against its legal consequences. Still, with every deduction due to this consideration, homicide in its worst forms is so deplorably common in Italy that, with such an example before her, it is surprising, to say the least, that France should at this moment have placed on the parliamentary *tapis* a Bill for bringing her treatment of the murderer into line with the Italian. M. Goron, sometime head of the criminal detective department, and M. Jaume, its chief inspector, are believed to be in sympathy with the promoters of the Bill; but such reasons as are ascribed to them for supporting it would not have commended themselves to John Stuart Mill or Sir George Bowyer, or indeed to the British Parliament of the late 'sixties.'"

EVACUATION OF A LARGE CHRONIC PLEURAL EFFUSION BY INJECTION OF AIR.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 12th M. Dufour and M. Foix called attention to a method of treating large chronic pleural effusions which, though not new, does not seem to be practised as much as it deserves. They showed a woman, aged 58 years, on whom paracentesis had been performed six times for right sero-fibrinous pleurisy of six months' duration. On each occasion it was not possible to remove more than one and a half litres of fluid because dyspnœa and cough were induced. Paracentesis was performed a seventh time and beside the trocar a needle used for lumbar puncture, connected by a rubber tube with the bellows of a thermo-cautery, was passed. The rubber tube was interrupted by a piece of glass tubing filled with cotton-wool to sterilise the air which was driven through it. All precautions to insure asepsis were taken. While the liquid pleural effusion flowed out by the cannula, and this without aspiration, air was injected as soon as the patient felt uncomfortable. This did not occur until one and a quarter litres of fluid had flowed out. Then air was injected producing a characteristic bubbling sound. The patient at once declared that she no longer felt uncomfortable. The flow, which had been momentarily suspended, took place more rapidly than before. After a few moments signs of respiratory difficulty appeared again; on injecting air they at once disappeared. The process was continued in this manner until all the liquid above the level of the puncture was removed. This amounted to three and a half litres. The injection of gas, and particularly of air, into the pleura has long been practised with different objects. M. Vaquez and M. Quiserne have recommended it in the treatment of relapsing pleurisy.[1] M. Dufour and M. Foix insisted on the indication for this method when it is desired to evacuate at a single operation a large effusion in cases of chronic pleurisy. In such cases the collapsed lung, whether as a result of adhesions or of a process of sclerosis, is unable to expand when the pressure is removed. The pleura may contain three or four litres of fluid, but as soon as one and a half litres are removed symptoms of intolerance begin and the paracentesis has to be stopped. But by injecting air an effusion, however large, may be completely evacuated without producing any symptoms. If desired, the amount of air injected can easily be ascertained by injecting air with the bellows into a graduated vessel full of water and inverted over a basin of water. The amount of air injected on squeezing the bellows can thus be measured. In the case related above the amount of air injected was estimated at one and three-quarter litres. In another case four litres of pus were removed by this method although paracentesis had been performed five times previously and had only effected the removal of one and a half litres. Three litres of air were injected.

THE NEW SYDENHAM SOCIETY.

THE forty-seventh annual meeting of the New Sydenham Society was held at 15, Cavendish-square, London, on Oct. 1st. The President, Professor William Osler, took the chair. The report and balance-sheet for 1905 were presented. The subjects illustrated in the Atlas of Clinical Medicine and Surgery in 1905 had included fractures and dislocations, chiefly by radiographs; elephantiasis in English practice, and so on. For the current year members had already received a double fasciculus of the atlas, illustrating the subject of variola in 20 plates, and a printed volume containing selected monographs on the parasites of syphilis and small-pox. The year's issue would be concluded by a second double fasciculus giving additional illustrations of variola and varicella. It was pointed out by Mr. Jonathan Hutchinson that as the six-year period for which the society had guaranteed a specified number of plates per annum expired this year, the society would not in the future bind itself to issue a specified number of plates per annum, but would issue either fasciculi of the Atlas or printed volumes as seemed desirable. In order to increase the sphere of the society's usefulness an accession of new members was earnestly to be desired. The report and balance-sheet were then adopted. On the motion of the President, Professor Osler, it was unanimously decided to present a set of the society's past volumes and atlas fasciculi, so far as they are in print, to the medical library at San Francisco. The meeting terminated with votes of thanks to the retiring President, Vice-Presidents, and Members of Council. The list of officers for 1906–07 is as follows:—President: Mr. W. Watson Cheyne. Vice-Presidents: Dr. Theodore D. Acland, Professor T. Clifford Allbutt, Sir Thomas Barlow, Bart., Dr. Thomas Buzzard,

[1] THE LANCET, August 2nd, 1902, p. 306.

Sir W. S. Church, Bart., Dr. T. Colcott Fox, Sir W. Tennant Gairdner, Dr. G. E. Herman, Dr. J. Hughlings Jackson, Lord Lister, Professor William Osler, Mr. H. W. Page, Sir Richard Douglas Powell, Bart., Dr. Philip H. Pye Smith, Mr. John Tweedy, and Professor G. Sims Woodhead. Council: Dr. F. J. Baildon, Sir James Barr, Mr. Lyder Borthen, Dr. J. Rose Bradford, Professor J. W. Byers, Dr. W. Collingridge, Dr. W. S. Colman, Dr. R. H. Coombs, Dr. W. Elder, Dr. William Ewart, Mr. N. Hay Forbes, Dr. Charles Gibson, Dr. S. H. Habershon, Mr. Raymond Johnson, Mr. C. R. B. Keetley, Dr. P. W. Latham, Mr. Jordan Lloyd, Dr. Thomas Oliver, Sir Isambard Owen, Mr. D'Arcy Power, Mr. R. J. Pye-Smith, Dr. Guthrie Rankin, Dr. Ernest S. Reynolds, Dr. F. T. Roberts, Dr. Humphry D. Rolleston, Dr. A. Routh, Dr. R. Saundby, Dr. R. Shingleton Smith, Dr. Ralph Stockman, Dr. T. J. Walker, Mr. Edward Ward, and Dr. E. T. Wilson. Treasurer: Mr. Henry Power. Auditors: Dr. Leonard W. Sedgwick and Mr. Waren Tay. Honorary secretary: Mr. Jonathan Hutchinson. Acting secretary: Dr. A. E. Russell.

SOAP, ANCIENT AND MODERN.

THE present agitation with regard to the soap question is bringing to light some interesting facts concerning the manufacture of soap which the public would do well to consider. Already in these columns we have published certain authorised statements which show that there exist some differences of opinion as to what constitutes the best soap. It is evident that the view in regard to a standard is by no means unanimous. Apart from materials, our chief concern as medical writers is whether the soap offered to the public is free from impurities which are likely to harm the skin or to destroy the quality of clothing. It seems to us that it matters little what the fatty basis is so long as that basis is saponified or converted into pure soap, and that the alkali is completely neutralised by the fat, whether it be of animal or vegetable origin. Economical considerations are, of course, also raised by the question of the amount of water in soap. But water can obviously be a variable quantity in any kind of soap, whether, that is to say, it be produced from one fat or another. Adverting to an annotation under the above heading in our issue last week, in which we referred to the view of certain soap-makers that the old-fashioned tallow soap was, after all, the best, another well-known firm of soap-makers point out that cocoanut or palm kernel oils are not used merely to make the bar soap hard enough but because of their wonderful efficacy as soap-making material and besides they are sweet and entirely of vegetable origin and do not easily become rancid. It would appear that large manufacturers adopt the very wise precaution of submitting their soaps to the control of a well-equipped laboratory so as to insure that the combination of fat and alkali is exact. The advantage of the so-called oil soaps, we are informed, is their ready solubility and hence their rapid detergent power. We still think that it would serve greatly in the interests of the public if the question of toilet soap containing, at any rate, free alkali could be controlled by some such machinery as that of the Sale of Food and Drugs Act.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

THE next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga and amounting to about 8180, will be made on July 14th, 1907, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine but must not have been published. They must be typewritten and must be received by the Secretary of the College, Dr. Thomas R. Neilson, on or before May 1st, 1907. Each essay must be sent without signature but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and the address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

RUSSIAN BUDDHISTS AND THE SO-CALLED TIBETAN MEDICINE.

IN the *St. Petersburger Medicinische Wochenschrift* of June 17th an interesting paper under the above title was published by Dr. Leo Bernthenson who prepared his observations for a special commission of the Russian Government to investigate the practice of Tibetan medicine among the Mongolian inhabitants in the Irkutsk and Transbaikal districts and to promote the supply of medical aid to them. The inhabitants of these districts are largely Buryats and Kalmucks and the few Russian medical officials, whose duties are administrative as well as curative, scattered throughout these large tracts of country are unable to supply the necessary aid, and, moreover, the majority of the people are Buddhists and therefore under the control of the Lamas. In the course of his paper Dr. Bernthenson gives some interesting details of the practice of medicine by the Tibetans. So far as can be determined the origin of the medical knowledge of the Tibetans is the Indian medicine modified by Buddhistic teachings. The first medical work in the Tibetan language appeared about the year 685 of the Christian era, at the time of Sakya-Muri (the fourth human incarnation of Buddha). This book, known as "Schud-Schi," was subsequently modified slightly by a Tibetan physician, Jutog By II., who was born about the year 786 and is said to have lived for 125 years. In this form the work served as a text-book of medicine until the end of the seventeenth century. At the beginning of the eighteenth century the Lama practitioners of medicine began to work among the Buryats, and the Buryat Lamas translated the handbook "Schud-Schi" into the Mongol-Buryat language. One of these translations with commentaries added was made by Sultim-Badmajew, who subsequently went to St. Petersburg. This has been translated into Russian by the younger Badmajew. This Russian translation affords a wealth of material for the study of Eastern medicine. The book is found to contain many excellent observations and is scientific in the true sense of the word, which renders it so much the more surprising that practically no advance has been made since the time of its first appearance 1200 years ago. It contains observations on embryology, anatomy, physiology, and pathology. It affords data regarding the diagnosis and prognosis of diseases. A list of drugs is given, and it is found that the followers of the "Schud-Schi" make use of products of vegetable origin only. But various measures are recommended, among them compresses, baths, massage, cauterisation, venesection, and other operative procedures, such as extirpation and amputation. Various instruments are described, such as sounds, catheters, dental apparatus, and instruments for cataract operations, for removal of exudates, and for the administration of nutrient enemata. In the anatomical section of the work the enumeration of the organs plays an important part. The body is divided into a series of regions which are joined together by the skeleton, the muscles, and the nerves. The number of the bones is given as 360, the number of the nerves as 900, the number of joints as 270, while the pores in the skin are given as 11,000,000. The heart is

described as "the king of the organs and the support of life" and is regarded as being supported by the lungs, "like a mother holds her infant in her arms." The liver is described as "like a mountain with sharp peaks," while the gall-bladder is like a purse containing gold. The origin of disease is attributed to the inability to curb the passions, to wickedness, and to ignorance. From the inability to control the passions disturbances result in the nourishment of the organs and tissues maintaining the bodily heat. The lack of true goodness causes lack of nourishment, especially of the heart and liver, while to ignorance the disturbances of the mucous and epithelial tissues are referred. Four other conditions strengthen or weaken the influence of the three main factors above enumerated; these are the mode of life, food and drink, the season of the year, and the individual temperament. Diagnosis of disease is to be made by inspection, palpation, and careful inquiry as to the history. The tongue is to be examined carefully and the pulse felt, while the urine is examined both as to its appearance and its taste. The classification of diseases is a complex one but many diseases as known in Western medicine are described, such as gout, cholera, measles, and small-pox. In treatment the mode of living and the diet are given the place of honour, while, as in Buddhism generally, cleanliness and sobriety are inculcated. Physical labour, especially in the open air, is recommended, as are muscular exercises. The directions to the practitioner are of great interest. He must be thoroughly qualified for the practice of medicine, must know his duty, and be humane, thoughtful, and sympathetic to his patient. He is directed to keep his instruments as clean as his mind and his signet. He must heal the sick, comfort the anxious, and cure those "possessed." He must acquire a gentle touch and a practised hand for diagnostic and therapeutic measures and must learn to reassure the patient by quiet and agreeable conversation, and should convince him that the drug is a treasure or a nectar which will cure him. In respect of his medicines the physician is to be punctual in his preparation of them, and the vessels to hold them are to be as clean as a beaker for nectar.

THE TREATMENT OF PULMONARY TUBERCULOSIS OCCURRING IN INSANE SUBJECTS.

IN many asylums arrangements have now been made for the treatment of patients who are suffering from pulmonary tuberculosis by open-air methods. The results have been satisfactory and the adoption of this treatment should be widely followed. In the *Columbus Medical Journal* for August, 1906, is an article by Dr. J. Stockton on "Tuberculosis in State Hospitals," giving the results obtained by using open-air methods in the Columbus State Hospital. He draws attention to the extent to which pulmonary tuberculosis exists in institutions for the insane and rightly lays stress on the necessity which exists for the adoption of stringent measures. Such a course would prove beneficial not only to the tuberculous patients themselves but would also serve to limit the danger of infection. It is a matter of the utmost difficulty, if not one of impossibility, to prevent an insane patient from expectorating and soiling his clothing with his sputum. He thus becomes a distinct source of danger to others. By means of isolating tuberculous patients in suitable buildings the risk of infection is naturally greatly lessened. Dr. Stockton describes the methods adopted in the hospital of which he is superintendent. In 1903 three tents were equipped for the accommodation of 24 women. The patients enjoyed this mode of life and the majority improved both physically and mentally. Even several of the "bed-ridden class" began to improve and after having the benefit of living in the tents for a time were able to be out of bed, not infrequently assisting in the work around the camp. Each year arrangements have been made for more patients and now accommodation exists for 80—six tents for women, each containing eight beds, and two tents for men, each containing 16 beds. Great attention is paid to the diet. Malt extract is used extensively before meals and emulsion of cod-liver oil is given in all cases where nutrition is poor and food is taken with difficulty. As a rule, such remedies are not required in sanatorium treatment, but when dealing with the insane difficulties in inducing patients to take the right amount of food are likely to arise.

DEATH UNDER CHLOROFORM IN A DENTIST'S CHAIR.

WE learn from a local contemporary that another death has taken place when chloroform was administered with the view to a dental operation. The facts as reported are these. A female patient, aged 31 years, was advised to have 14 or 15 teeth extracted. She went at 11 A.M. to the dentist's rooms with her medical attendant. The latter then administered chloroform, sprinkling the anæsthetic upon a mask. When she appeared to be going under the influence—that is, we suppose, as she was passing from the second to the third degree of narcosis—respiration and circulation stopped. The usual methods for resuscitation were adopted but without effect. The patient's heart had been examined before the administration and was considered to be healthy. The necropsy, however, revealed the fact that it was dilated and fatty. The patient was obese and had suffered from indigestion. We have much sympathy for the friends and for the administrators of the chloroform in these sad cases, but we are impelled to point out that much sorrow and anxiety would be avoided if dental operations were conducted under anæsthetics which have not the terrible record that statistics accord to chloroform. Fat persons sitting in dental chairs run an especial risk when chloroform is given, even in the most favourable circumstances. The patients seldom regard a dental operation as of much importance, and even if they are cautioned to abstain from food—a precaution not always adopted—they frequently ignore the directions. They are placed in the dental chair in a faulty posture as regards chloroform inhalation and so they breathe in an inadequate manner and commonly struggle. Their breathing is also hampered by their clothing. The chloroformist may unconsciously press the chloroform when sprinkling it upon a mask. The patient then gets a much more concentrated vapour than the administrator recognises. We do not say that chloroform is an inappropriate anæsthetic when a large number of teeth have to be removed; it is the recognised anæsthetic for operations on the mouth, but we contend that it should not be given to a patient who walks out of the street into a dentist's chair, but, on the contrary, only after a special and heedful preparation. If it is necessary to remove a large number of teeth at one sitting at a dentist's rooms the operation should be done under nitrous oxide given by the continuous method, and when this is impossible ether or chloride of ethyl should be administered. Where chloroform is selected the rule should be that all the same precautions must be adopted as when a surgical operation under that anæsthetic is about to be undertaken. This course is best not only for the patient but for the medical man and the dentist, and the experience which we have gained of chloroform during the past fifty and upwards years has shown that it is an anæsthetic to be used only with the utmost discretion and forethought. The fact that many country medical practitioners can point to hundreds of cases in which they have given chloroform for dental operations without a mishap does not invalidate our contention. A death due entirely to the

anæsthetic should be a rare occurrence in the case of a patient submitting to a dental operation. We say nothing of fatalities arising from such causes as impaction of a tooth in the larynx or idiopathic syncope which may or may not bear any relation to the anæsthetic. It is then not too much to ask that everything should be done which is possible and which experience indicates to minimise the risk to patients while undergoing such minor operations as occur in dental surgery.

SEPTEMBER AND OCTOBER SUNSHINE.

THE following figures fully support the popular opinion of the general excellence of the weather of last September but also show that except in London and at certain other places in the south-east of England October was not a particularly bright month. At all the resorts given in the table except Brighton September was unusually sunny, the mean daily duration being at least an hour in excess of the average, and in many localities more than two hours per day in excess, while at Llandudno the total of 217 hours was nearly equal to three hours per day more than is generally recorded at that place during September.

Stations.	September.		October.	
	Number of hours.	Difference from average.	Number of hours.	Difference from average.
London	158	+41	97	+26
Bath	197	?	99	?
Torquay	229	+68	109	- 5
Ryde	215	+38	124	- 2
Shanklin	233	+59	125	- 1
Bournemouth...	224	+60	104	- 8
Brighton	181	+16	129	+ 4
Eastbourne	208	+41	143	+22
Hastings	203	+36	128	+ 5
Folkestone	199	+32	140	+18
Margate	209	+60	125	+17
Southend...	200	?	144	?
Clacton	226	?	127	?
Lowestoft...	235	+62	131	+18
Blackpool...	202	+76	82	- 8
Llandudno	217	+88	88	+ 1
Aberystwyth	216	?	95	?
Jersey	220	+38	99	-27
Manchester	142	?	58	?

In October no spot was so sunny relative to its average number of hours as London (Westminster), where the aggregate of 97 hours slightly exceeded the corresponding figure at Aberystwyth and was only a little inferior to the figures at Jersey and Bournemouth. The brightest resorts were Southend-on-Sea, Eastbourne, and Folkestone, and the dullest Llandudno and Blackpool. The very limited number of sunny hours at Manchester during last month serves well to illustrate the effectual manner in which the dust and unconsumed carbon from thousands of chimneys arrest the rays of the sun altogether or so dim their light that they have not sufficient power to leave their trace on the recording card. The temperature of the two months was above the average throughout the whole kingdom. September, it will be remembered, commenced with record readings of 90° and upwards in many parts of England; the highest point touched by a properly screened and verified thermometer was 96° at Bawtry in the north of Nottingham. The month as a whole, however, was only slightly warmer than usual. October was a very warm month, the average height of the thermometer being between four and five degrees above the normal both during the night and day over the entire country. In London the excess over the average was as much as 5·5°. Very few Octobers during the past 50 years have been so consistently warm and very few have recorded such high maximum readings. With regard to rainfall the two months were widely different. September was exceptionally dry everywhere, while October, without being extremely wet over the kingdom as a whole, was exceptionally rainy in certain districts. It may be mentioned that October is generally the wettest month of the year over by far the greater proportion of the United Kingdom. The month under review was much wetter than usual at most places along the south coast of England and also in the north-east and north-west of England, as well as in the east and north-east of Scotland. At Leith the total rainfall amounted to the high figure of 5·82 inches, against an average of 2·19 inches. In London the fall of 2·88 inches was only 0·15 inch in excess of the average.

"THE ART OF MAKING WATER STAND UPRIGHT IN BUTTER."

A CORRESPONDENT from Holland writes with reference to our remarks on the adulteration of butter: "About 100 tons of butter are sold in England every week containing short weight of butter fat. Unless exposed by the press it will soon be 1000 tons per week with short weight of fat in every pound. Dry colonial and other butters, containing 85 to 90 per cent. of fat, are impoverished in England by blending them with milk, which (as it comes from the cow) contains nearly 90 per cent. of water. Thus, splendid dry butters which in their original condition had only 12 per cent. or less of water are made to hold about 24 per cent. Water displaces butter fat and the poor buy the mixture for butter." As was well put by a public analyst in his report to the Local Government Board: "When it is remembered that the official standard for water in butter is already 16 per cent., whereas the majority of samples analysed only yield from 10 to 12 per cent. of water, it will be seen that the cost of making water stand upright with a coating of butter is a remunerative one from the butterman's point of view." Surely no time should be lost in stamping out this cruel and infamous fraud.

IS ALCOHOL NORMALLY PRESENT IN THE BLOOD AND TISSUES?

ABOUT fifty years ago Dr. W. Hutson Ford published an article in the Journal of the Elliott Society of Natural History of Charleston in which he maintained that dextrose is normally destroyed in the circulation by the alcoholic fermentation, the resultant alcohol being oxidised in successive steps of transformation, and that this destruction of sugar is a main source of animal heat. This view is supported by numerous experiments which he reproduces in the recently published *Journal of Physiology*, Vol. XXXIV., 1906. The matters operated upon were the blood, the liver, the lungs, and the pancreas of oxen. They were rapidly comminuted and heated to 100° C. The first distillate was purified by successive distillations until a final product of from three to five grammes was obtained and the quantity of alcohol which it contained was then determined. Empyreumatic matters were removed by repeated treatment with hydrochloric acid, lead acetate, and animal charcoal. The tests for alcohol on which Dr. Ford relied were the development of an emerald green colour on the addition of Leconte's chromic acid solution and the direct ignition of the vapour of alcohol in a small glass balloon when the final distillate was carefully made to boil. Dr. Ford supplies the details of experiments made on various organs of the body and states that the quantities of alcohol obtained though small were very appreciable; thus from 6970 grammes of ox blood 0 0650 gramme of alcohol was obtained and from 870 grammes of lung 0 0168 gramme.

The mean quantity of alcohol in 10,000 parts of blood was 0·0570 gramme. The alcohol found in the tissues Dr. Ford believes to be derived from dextrose, and he estimates that nearly 10 per cent. of all the heat produced by the destruction of this dextrose in the body is to be credited to the molecular combinations comprised under the term fermentation, and a little more than 90 per cent. or more to the progressive oxidation of the alcohol formed in the system.

AMONG the Fellows of the Royal Society recommended for election to the council of the society for the ensuing year are Dr. David Ferrier, Dr. E. H. Starling, and Dr. A. D. Waller. The society's medals have this year been adjudicated by the President and council as follows: the Copley medal to Professor Elias Metchnikoff for the importance of his work in zoology and in pathology; the Rumford medal to Professor Hugh Longbourne Callendar for his experimental work on heat; a Royal medal to Professor Alfred George Greenhill for his contributions to mathematics, especially the elliptic functions and their applications; a Royal medal to Dr. Dukinfield Henry Scott for his investigations and discoveries in connexion with the structure and relationships of fossil plants; the Davy medal to Professor Rudolf Fittig for his investigations in chemistry and especially for his work in lactones and acids; the Darwin medal to Professor Hugh de Vries on the ground of the significance and extent of his experimental investigations in heredity and variation; and the Hughes medal to Mrs. W. E. Ayrton for her experimental investigations on the electric arc and also upon sand ripples.

So many medical men have been and are interested and distinguished in the study of numismatics, to mention only the names of Richard Mead, William Hunter, and Aquilla Smith in the past, and Sir Hermann Weber and Dr. Oliver Codrington, librarian of the Royal Numismatic Society, in the present, that it may not be out of place to record in the columns of THE LANCET that in the board-room of the British Museum on Nov. 1st a presentation was made to Dr. Barclay V. Head, D. Litt., on the occasion of his having resigned the post of "Keeper of Coins and Medals" in the British Museum. The presentation took the form of a volume, entitled Corolla Numismatica, "in honour of Barclay V. Head." The various articles contained in this interesting volume were specially contributed by eminent foreign and British numismatists. Sir John Evans, K.C.B., a trustee of the Museum and President of the Royal Numismatic Society, occupied the chair and some 60 subscribers to the testimonial were present.

THE quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at 3 o'clock on Thursday, Nov. 15th at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. Robert Jones. Members will dine together at the Café Monico at 7 P.M. All communications should be made to Dr. C. Hubert Bond, honorary general secretary.

FOREIGN UNIVERSITY INTELLIGENCE.—*Florence:* Dr. Giuseppe Resinelli of Parma has been appointed Extraordinary Professor of Midwifery and Gynæcology.—*Heidelburg:* Dr. Krehl of Strasburg has been offered the chair of Internal Medicine vacated by Professor Erb who is retiring.—*Kharkoff:* Dr. Lomikovski, Professor of Therapeutics, and Dr. Danilevski, Professor of Physiology, are retiring from the active duties of their respective chairs.—*Königsberg:* Dr. Friedrich Henke of Charlottenburg has been appointed Professor of Pathological Anatomy.—*Leipsic:* Dr. Max Loehlein has been recognised as *privat docent* of Pathological Anatomy.—*Turin:* Dr. Mario Carrara has been appointed Ordinary Professor of Forensic Medicine.

FORTY-EIGHTH ANNUAL REPORT OF THE GENERAL BOARD OF COMMISSIONERS IN LUNACY FOR SCOTLAND, 1906.

ON Jan. 1st, 1906, there were in Scotland 17,450 insane persons under official cognisance; of these 2549 were maintained from private sources, 14,850 by parochial rates, and 51 at the expense of the State. The total number on Jan. 1st, 1905, was 17,241; therefore there is an increase during the past year of 209. The following are the differences in the manner of distribution of registered lunatics on Jan. 1st, 1906, compared with Jan. 1st, 1905. In royal asylums there is an increase of eight private patients and a decrease of three pauper patients; in district asylums a decrease of 20 private and an increase of 108 pauper patients. In private asylums there is a decrease of two patients; in lunatic wards of poorhouses an increase of 12 pauper patients; and in private dwellings an increase of one private and 48 pauper patients. Comparing 1905 with 1904, as regards registered lunatics, the following results are obtained: (1) a total increase of 163, being a decrease of 13 private patients and an increase of 176 pauper patients; (2) the total increase of 163 arose from an increase of 114 in establishments and 49 in private dwellings; and (3) the increased number of 114 in establishments arose from a decrease of 14 private and an increase of 128 pauper patients. The average increase of pauper patients in establishments during the preceding five years was 274, so that the increase of 128 is much below the average.

The Commissioners report that 1905 is the first year since statistics were first taken in 1858 that there is no increase of the insane in proportion to the population; but this satisfactory statement must be taken in conjunction with another statement that there is "a large number of persons of unsound mind in Scotland who are not officially known to the Board." The number of persons received during 1905 in asylums as voluntary boarders was 96; this compares with 82, which was the average number for the previous decade. The Commissioners state that they consider the voluntary boarder system is a useful provision of the law. The recoveries per cent. of admissions, excluding transfers, in establishments, were 44·8 for private and 41·6 for pauper patients. Those for paupers compare unfavourably with the percentage of recent years, and the Commissioners make a valuable note of their views on this important subject. The proportion of deaths per cent. of the number resident in all establishments is 8·2 for private and 9·6 for pauper patients, which is slightly above the average of the five years 1900-04. The Commissioners consider that this tendency to an increased death-rate, which is taking place in spite of improved sanitary arrangements and more efficient treatment, may be due to the fact that "patients physically broken down are being admitted in increasing numbers." The number of deaths from pulmonary tuberculosis remains about the same as in former years but deaths under the heading of "general debility and old age" are decidedly more numerous. Changes amongst the attendants and servants are somewhat frequent, especially amongst the juniors, and again the Commissioners draw attention to the fact that the prison service is more attractive than that of the asylum, as pensions for long service can be obtained in the former.

The number of private patients provided for in private dwellings, with the sanction of the Board, is 126, about the same as last year. But the number of paupers so provided for on Jan. 1st, 1906, was 2752, showing an increase of 48 compared with the preceding year. This mode of treatment seems to be again becoming more popular, as the numbers in the last two years are the largest yet recorded. The general reports on the visitation of patients in private dwellings all speak highly of this mode of treatment, but attention is drawn to the marked differences shown by various parishes in their efforts to lighten local burdens by providing for suitable patients under private care. The Commissioners again draw attention to the want of accommodation in establishments for the poorer class of private patients. Another point of great interest in the report is the statement regarding wards in general hospitals and infirmaries for the observation and treatment of temporary mental disorder. Several parish councils appear to be prepared to make the experiment and the authorities of the Edinburgh Royal Infirmary have expressed themselves as

favourable to the proposal. Over ten pages of the report are devoted to discussing "deaths from general paralysis." The percentages do not suggest any marked increase of general paralysis during the past five years; nevertheless, 1905 shows a greater percentage than in previous years. There is one statement which seems remarkable and that is that "during the past year the number of female patients who died in the Edinburgh Royal Asylum suffering from general paralysis was both absolutely and in proportion to the number admitted larger than the number of male patients so dying, a record which has no parallel in the previous statistics on the subject so far as regards Scotland."

A number of pages are devoted to the consideration of deaths in establishments in which consumption or other tuberculous disease was present either as a principal or as a contributing cause. The Commissioners state that it is difficult to resist the conclusion that the enormously higher rates recorded in certain asylums, as contrasted with others similarly circumstanced, are due in great part to causes which are avoidable—that is, to causes which must be regarded as being under the control of the asylum authorities. The figures show that as a rule the patients who acquire consumption while resident in asylums are about twice as numerous as those who had been affected with it prior to reception. The cost of district asylums (building) forms the subject of an article which is well worth reading. It is all the more complete as it contains many valuable tables. This subject is followed by a review of the expenditure for maintenance of pauper lunatics. The report is accompanied by the usual statistical tables.

MEDICINE AND THE LAW.

Identification by Finger Prints.

THE development of the use of finger prints in the identification of criminals and in the detection of crime has been rapid of late years, although its original introduction took some time to accomplish, and a recent case tried before Mr. Loveland-Loveland, K.C., seems to go further than its predecessors in that the conviction of a prisoner was allowed to rest upon finger prints alone and upon evidence given with regard to them by a detective-inspector. A burglary had been committed in a grocer's shop and upon a pane of glass removed by the burglar from a window were found the marks of his finger tips. These were identified at Scotland Yard with the impressions of the fingers of a man previously convicted for burglary and he was arrested. At the sessions at Clerkenwell Detective Inspector Collins gave evidence to the effect that the impressions on the pane of glass coincided with those taken from the fingers of the prisoner, and the jury found him guilty. He does not appear to have disputed his guilt seriously, for he admitted another theft and previous convictions were proved against him without difficulty. He was not, however, defended by counsel and attention may be directed to two points which may at some future time arise in similar cases. The classification and identification of finger impressions are sometimes easy but on other occasions, as, for example, when very faint accidental marks left by a burglar are in question, considerable difficulty may be experienced. It will occur to many that if upon the uncorroborated evidence of such impressions the question of a prisoner's guilt is to depend, the testimony should come from a medical man trained in the observation of physical phenomena and not from a police officer. No one questions the honesty or the intelligence of the latter but apart from the very important matter of scientific training it is desirable that there should be no possible suggestion of professional bias. The other point arises out of the obtaining impressions of a prisoner's finger tips for comparison with those found at the scene of the crime or with those already placed upon record by the police. A prisoner before conviction may not be compelled to submit to a medical examination with a view to obtain evidence against him. Upon what principle, then, can the police before trial take impressions of his finger tips? The point is one for lawyers to consider but indirectly it affects medical men and it seems strange that a medical examination should be an assault but that steps taken by police officers to secure an accused person's identification, whether he will or not, including the obtaining of the impressions from his fingers, should be permitted.

Medical Practitioners and Evidence concerning their Patients.

At the recent trial of an action for breach of promise of marriage, in which the defence relied to a large extent upon charges of unseemly conduct on the part of the plaintiff, justifying the defendant in refusing to marry her, evidence was given by a medical practitioner on behalf of the defendant to the effect that he had attended the plaintiff on several occasions, and that although he had not seen her drunk he had found her muddled or dazed, alcohol being the cause of her condition, in his opinion. The witness was cross-examined upon points arising out of the fact that his fees had not been paid and also as to the position in which he had placed himself by coming into court on behalf of the defendant and by giving evidence as to matters observed by him when attending the plaintiff in his professional capacity. He was asked whether it was not unusual for medical men to give such evidence and he had to admit that it was so, though he appears to have added that they were bound to do so. He was also pressed to admit, and did so, that the ethics of his profession enjoined secrecy as to the treatment accorded by him to a patient. He appealed to the judge and he received scant consolation from Mr. Justice Grantham who said: "I do not know why you were called or why you are giving evidence, but I should have thought as a medical man you would have acted up to the principles of your profession which are very well known in this court." It seems quite clear that had this gentleman not attended the trial he would have heard very little if anything more about the matter, provided, of course, that he had maintained absolute silence as to his patient's affairs in communicating with the other party and with his solicitors, and, further, it is evident that had he gone into the witness-box and declined to answer any questions put to him with regard to her he would have had little or no pressure put upon him by the court to do so. Strictly speaking, the law accords no privilege to the medical man, but in fact, except in cases where grave public interests are at stake, as where the punishment of a crime or the establishment of innocence is involved, it is not very easy to compel a medical man to reveal his patient's secrets in the witness-box. In the first place, unless he or his patient has been indiscreet, it is difficult or impossible to prove that anything relevant to the issue has ever come within the medical man's knowledge; in the second place, the counsel who calls him into the box as a witness on behalf of his client can put no questions to him which savour of cross-examination without the judge's leave to treat him as a hostile witness; and, in the third place, there is a natural tendency to sympathise with his claim of privilege whether it is recognised by the law or not. It must be remembered that if a witness disregards a subpœna and does not come to the court the party who has served him with that document has no very certain remedy. He can sue the witness who refused to obey the subpœna and may recover from him such damages as he can prove himself to have incurred thereby, but it can be seen that the establishment of such a cause of action and the proof of the resultant damage are not easy matters. The position of the medical man when pressed to give evidence tending to injure a patient is not enviable but at the same time he can take up a strong defensive position. If his patient has, to use a current expression, "given away" his medical adviser by talking of what has passed between them, then the position of the latter is altered by the act of the former, and the obligation of silence may fairly be regarded as to some extent modified.

Hard Measure for a Medical Man.

At Southwark county court on Oct. 22nd a medical man was sued for damages on the ground of alleged negligence in allowing a piece of placenta to remain in the womb of a patient after confinement. The patient made a fairly good recovery but about three weeks after the confinement hæmorrhage came on and when another practitioner was called in he removed what he believed to be a piece of placenta. An obstetric specialist gave evidence to the effect that the treatment carried out by the first practitioner was exactly what his own would have been, adding that the piece of "placenta" alleged to have been found might, quite probably, have been only an organised blood clot. The witness held also that the leaving of a small piece of placenta behind was by no means necessarily a sign of negligence: the unfortunate occurrence might happen with any obstetrician, however highly skilled. The jury after some time returned with a statement

that "They were not qualified to say whether the doctor was negligent or not." The judge sent them back, and after some time they returned with a verdict against the medical man and £25 damages. On Nov. 5th an application for a new trial was heard by the judge. He refused the application on legal grounds, saying that he thought it fair to say that if the decision had rested with him he would unhesitatingly have decided in the medical man's favour. The practitioner in question, who was defended throughout by the London and Counties Medical Protection Society, received hard measure.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Nov. 8th, 1828.

Upon the umbilical cord we sometimes meet with knots, and, if I may confide in reports received, sometimes two or three knots may be found upon the cord at once. Mr. Rogers, an American, and a student at these Hospitals, informed me, that at New York, a case had occurred where *three knots* were on the funis, and yet, notwithstanding these knots, injection could be thrown from one end of the cord to the other without difficulty. To Dr. Hunter I may refer you for a very plausible explanation of the formation of these knots when single, for he has suggested, that the umbilical cord, at birth, may perhaps form a coil round the margin of the os uteri within, and that the fœtus, in passing the orifice of the uterus, may, at the same time, pass through the loop, carrying the umbilical extremity of the cord along with it, in the way here shown, so as to form the knot at the very moment when the body passes into the world. Observe the demonstration. And this explanation enables us to understand well enough how a single knot may be formed; but then how is it that two or three knots are produced? how that a knot may be found on the cord in the earlier months, though the fœtus has never left the cavity of the uterus? Really the solution of this knot may remind one of that of Gordius, or of the knot scarcely less notorious, knit by the hand of Obadiah, fated to bring to light that comprehensive code of imprecations, the contents of which his liberal master so generously showered down upon every part of his person.

The origin of the cord is the navel; its termination is the placenta, where its insertion is commonly central, though it sometimes unites with the placenta at the margin, or intermediately. And this I the rather wish you to notice, because when the insertion of the cord is marginal, as in this preparation, you might be led to imagine that one-half of the placenta had been torn away, the other half still remaining in the uterine cavity.

An eccentric insertion of the cord at the abdominal extremity is more rare, and yet now and then even this variety is observed, the cord springing, as in this preparation shown, from the one or other side of the abdomen. The point is curious, but in a practical view it seems to be of small obstetric import.[1]

REMARKABLE CASE OF RABIES IN A WOLF.

A she-wolf was lately killed in the Departement de la Meurthe, apparently with all the symptoms of rabies, after having bitten about thirty sheep, a dog, and two men; its viscera, on examination, were found in a healthy state, except the intestinal canal, the mucous membrane of which was violently inflamed. As the two wounded persons, one of whom was most shockingly lacerated, got perfectly well, it would seem that the animal was not labouring under true rabies, and that its fury was produced merely from the irritation of the intestines. A very remarkable circumstance in the examination of the animal was, that a musket-ball was found imbedded in the substance of the heart, and covered by a whitish and very firm cicatrix.—*La Clinique.*

[1] Excerpt from "Lectures on the Gravid Uterus, and on the Diseases of Women and Children. Delivered at Guy's Hospital by Dr. Blundell. Lecture III."

ASYLUM REPORTS.

Nottingham City Asylum (*Report for the year 1905*).—During the year 1905 there were 163 patients admitted to the asylum (74 males and 89 females). Of these, the medical superintendent (Mr. E. Powell) considered, 35·6 per cent. were incurable on admission. Comparing the ratio of admission to population in Nottingham with the rest of the country, it is found to be 6 per 10,000, against 5·76. This refers to paupers only. There appears to have been no increase in the rate of admission to population in Nottingham during the past ten years. As to age and civil state, 16 of the admissions were under 20 and 14 were over 65 years. 63 were single, 80 were married, and 20 were widowed. 30 were said to have heart disease—a very high percentage. Of the 77 discharges, 66 were considered recovered, giving a percentage of 42 on the admissions (30·9 males and 51·1 females). There were 66 deaths (47 males and 19 females), the rate being 8·42 per cent. of the average number resident, this being nearly 2 per cent. lower than the average. There were 21 deaths from general paralysis and 11 from pulmonary tuberculosis. The medical superintendent states that in most of the tuberculous cases the disease was present on admission. Turning to the causes of insanity in the recent admissions 22 were due to drink (16 males and 6 females); this is a percentage of 13·5 (21·5 males and 6·7 females). Compared with other asylums this is lower in both sexes. Hereditary predisposition was found in 23 out of the 163, which is very low, and, as the medical superintendent states, is probably misleading owing to the difficulty in obtaining trustworthy histories. No suicide or fatal accidents have taken place; neither were there any cases of infectious diseases. Regarding the nursing staff, the male night staff has been increased by one. An attendant and a nurse were dismissed for misconduct. Three attendants and two nurses obtained the nursing certificate of the Medico-Psychological Association. There is still considerable overcrowding in the female division but a new dormitory is nearing completion which will relieve to a certain extent the want of room. The weekly charge for the city patients remains at 10*s*. There are 20 male patients belonging to other counties.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8305 births and 4418 deaths were registered during the week ending Nov. 3rd. The annual rate of mortality in these towns, which had been equal to 14·6 per 1000 in each of the two preceding weeks, was again equal to 14·6 last week. During the first five weeks of the current quarter the death-rate in these towns averaged 15·3 per 1000; the rate during the same period in London did not exceed 14·2. The lowest death-rates in the 76 towns during the week under notice were 6·2 in Leyton, 6·7 in Northampton, 7·2 in Hornsey, and 8·3 in Tottenham and in Grimsby; the rates in the other towns ranged upwards to 20·8 in Liverpool, 21·9 in Middlesbrough, 22·0 in Hanley, and 23·7 in Oldham. The 4418 deaths in the 76 towns were within four of the numbers returned in each of the two preceding weeks, and included 515 which were referred to the principal epidemic diseases, against numbers declining from 2570 to 561 in the eight preceding weeks; of these, so many as 214 resulted from diarrhœa, while 103 were referred to measles, 78 to diphtheria, 48 to "fever" (principally enteric), 41 to scarlet fever, 31 to whooping-cough, and not one to small-pox. The deaths from these epidemic diseases were equal to a mean annual rate of 1·7 per 1000 in the 76 towns, and to 1·2 in London. These epidemic diseases caused no death last week in Brighton, Walsall, Northampton, Hornsey, or in five other of the 76 towns; whereas the highest death-rates therefrom were 6·2 in Norwich, 6·3 in Bootle, 7·5 in Warrington, and 7·7 in Rotherham. The deaths referred to diarrhœa (mainly of infants), which had declined in the eight preceding weeks from 2342 to 292, further fell last week to 214, but caused annual death-rates equal to 2·6 per 1000 in Rotherham, 3·1 in Middlesbrough, 3·3 in Oldham, and 4·9 in Preston. The 103 fatal cases of measles

showed a further considerable increase upon recent weekly numbers, and caused the highest rates of mortality in Rochdale, Bootle, South Shields, Warrington, Rotherham, and Norwich. The deaths referred to "fever" were fewer by ten than those returned in the previous week, and showed the largest proportional excess in Warrington. The 78 fatal cases of diphtheria exceeded the number in any recent week, and caused the highest rates of mortality in Aston and Ipswich. The greatest fatality of scarlet fever occurred in Wolverhampton, and from whooping-cough in Middlesbrough. No case of small-pox was under treatment in the Metropolitan Asylums hospitals during the week, no case of this disease having been admitted thereto since the end of June. The number of scarlet fever cases under treatment in the Metropolitan hospitals and in the London Fever Hospital, which had increased in the nine preceding weeks from 3042 to 4066, further rose to 4177 during the week under notice; 499 new cases were admitted to these hospitals during the week, against 566, 548, and 542 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 146 and 150 in the two previous weeks, further rose last week to 200, but were so many as 105 below the corrected average in the corresponding week of the four preceding years, 1902–05. The causes of 34, or 0·8 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester and Salford, Leeds, Bristol, West Ham, Bradford, and in 52 other of the 76 towns; the proportion of uncertified deaths again showed, however, a considerable excess in Liverpoool, Birmingham, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 15·8 and 16·3 per 1000 in the two preceding weeks, declined again to 16·0 in the week ending Nov. 3rd, but exceeded by 1·4 the mean rate during the same week in the 76 English towns. The rates in the eight Scotch towns ranged from 13·4 and 14·4 in Aberdeen and Edinburgh to 18·1 in Perth and 19·0 in Dundee. The 548 deaths in the eight towns were fewer by ten than those returned in the previous week, and included but 48 which were referred to the principal epidemic diseases, against 96, 78, and 75 in the three preceding weeks. These 48 deaths were equal to an annual rate of 1·4 per 1000, which was 0·3 below the rate from the same diseases in the 76 English towns, and included 19 which were referred to diarrhœa, eight to "fever," eight to diphtheria, five to measles, four to scarlet fever, four to whooping-cough, and not one to small-pox. The deaths referred to diarrhœa, which had been 56, 47, and 40 in the three previous weeks, further fell last week to 19, of which 12 were returned in Glasgow. All the eight deaths referred to "fever," of which five were certified as cerebro spinal fever, occurred in Glasgow, as did six of the eight deaths from diphtheria. Three of the four deaths from both scarlet fever and whooping-cough were also returned in Glasgow. Of the five fatal cases of measles three occurred in Aberdeen and two in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had steadily increased in the five preceding weeks from 66 to 102, declined again last week to 94, and were so many as 30 below the number returned in the corresponding week of last year. The causes of 20, or 3·6 per cent., of the deaths registered during the week were not certified; the mean proportion of uncertified deaths in the 76 English towns during the same week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had steadily declined in the four preceding weeks from 26·0 to 21·6 per 1000, rose again to 27·4 in the week ending Nov. 3rd. During the first five weeks of the current quarter the death-rate in the city averaged 24·1 per 1000, the mean rate during the same period being only 14·2 in London and 15·1 in Edinburgh. The 199 deaths of Dublin residents during the week under notice showed an increase of 42 upon the number in the previous week, and included 14 which were referred to the principal epidemic diseases, against number declining from 52 to 15 in the eight preceding weeks; these 14 deaths were equal to an annual rate of 1·9 per 1000, against 1·2 and 0·6 respectively from the same diseases in London and Edinburgh. These 14 deaths in Dublin included seven from diarrhœa, three from whooping-cough, two from measles, one each from "fever" and diphtheria, and not one either from scarlet fever or small-pox. The fatal cases of diarrhœa showed a further decline from recent weekly numbers; and the death from "fever" also showed a further decline. Four inquest cases and one death from violence were registered; and 77, or 38·7 per cent., of the deaths occurred in public institutions. The causes of six, or 3·0 per cent., of the deaths registered during the week were not certified; the percentage of uncertified causes of death last week did not exceed 0·2 in London, while it was 5·3 in Edinburgh.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Jame Mead France has been placed on the Retired List at his own request (dated Nov. 6th, 1906).

Deputy Inspector-General James Porter, C.B., has been promoted to the rank of Inspector-General of Hospitals and Fleets in His Majesty's Fleet. Fleet Surgeon William Tait has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Oct. 10th, 1906). Staff Surgeon Arthur Gaskell has been promoted to the rank of Fleet Surgeon in His Majesty's Fleet (dated Oct. 31st, 1906).

The following appointments are notified: — Deputy Inspectors-General of Hospitals: C. James to Gibraltar Hospital and W. E. Breton to Plymouth Hospital. Fleet Surgeons: J. A. Moon to the *Magnificent*, on recommissioning; W. Hackett to the *Goliath;* G. Welch to Haslar Hospital, for instruction of surgeons on entry; W. W. Pryn to the *President*, for temporary service at the Admiralty; and G. A. S. Bell to the *Irresistible*, on recommissioning. Staff Surgeons: J. A. L. Campbell to the *Repulse*, on recommissioning, and T. C. Meikle to the *President*, for three months' course at Edinburgh University. Surgeons: T. E. Blunt to the *Irresistible*, on recommissioning; L. Warren to the *Mercury*, for the *Hazard:* J. Whelan to the *Orion*, on recommissioning; F. G. Goble to the *Albemarle;* and G. C. Cross to the *Wildfire*, for disposal. Civil Practitioner: J. J. Robertson to be Surgeon and Agent at Portpatrick.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. E. Nichol, D.S.O., is appointed to command the depôt of the Royal Army Medical Corps at Aldershot. Captain L. E. L. Parker assumes the duties in connexion with the Committee on Physical Training at the War Office. Lieutenant-Colonel Edward Lewis Maunsell, on arrival in South Africa, is appointed Administrative Medical Officer at Bloemfontein, Orange River Colony. Captain Francis Stephen Irvine is selected for service with the West African Frontier Force.

ROYAL ARMY CORPS MEDICAL SCHOOL OF INSTRUCTION.

To be Commandant and Officer Commanding Depôt, Royal Army Medical Corps:—Lieutenant-Colonel Thomas J. R. Lucas, C.B., R.A.M.C., (dated Jan. 29th, 1906). To be Instructors: Lieutenant-Colonel Robert H. Firth, R.A.M.C., (dated Feb. 28th, 1906); Major John D. Ferguson, D.S.O., R.A.M.C. (dated June 13th, 1905). To be Assistant Instructor: Captain Henry C. R. Hime, R.A.M.C. (dated Feb. 5th, 1906).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major Murdo Mackenzie to be Surgeon-Lieutenant-Colonel (dated Oct. 23rd, 1906).

VOLUNTEER CORPS.

Royal Engineers (Volunteers): 1st Middlesex: Surgeon-Captain W. H. Bourke to be Surgeon-Major (dated Oct. 8th, 1906); Surgeon-Captain T. H. Chittenden resigns his commission (dated Nov. 1st, 1906).

Rifle: 1st Volunteer Battalion the South Staffordshire Regiment: Major C. T. Griffiths, from the Staffordshire Bearer Company, R.A.M.C. (Volunteers), to be Surgeon-Major (dated Oct. 15th, 1906).

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration

upon the undermentioned officers of the Volunteer Force, who have been duly recommended for the same under the terms of the Royal Warrant, dated July 25th, 1892:—*Northern Command: Artillery:* 1st Berwick-on-Tweed Royal Garrison Artillery (Volunteers): Surgeon-Major Charles Lachlan Fraser. *Engineers:* 1st (Sheffield) (West Riding) Yorkshire Royal Engineers (Volunteers): Surgeon-Major Charles Henry Willey. *Rifle:* 1st Volunteer Battalion the Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Lieutenant-Colonel Frederick Shann. *Eastern Command: Rifle:* 1st Volunteer Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant-Colonel Henry George Thompson. *Scottish Command: Rifle:* The Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment): Surgeon-Major Arthur Douglas Webster (Senior Medical Officer, 1st Lothian Volunteer Infantry Brigade).

DISCHARGES FROM NETLEY.

A somewhat important question was raised by Lord R. Cecil in the House of Commons on Monday last in regard to the procedure connected with the discharge and disposal of patients invalided from the army as unfit for further service. Mr. Haldane described the course followed at present, adding what had been already effected, and said that the matter was still under consideration. He was desirous of doing all he could in the interest of those concerned. Mr. Crooks made a practical suggestion that any money saved should be shared out for the benefit of the men.

HYGIENE IN THE FIELD.

The first of a series of winter lectures was given at Devonport War Course College on Oct. 29th, when Colonel Robert Caldwell, R.A.M.C., delivered an interesting address on "The Hygiene of Active Service." Major-General Sir John Leach, K.C.V.O., commanding Plymouth Coast Defence, presided. Colonel Caldwell dealt with the subject under the following headings:—(1) Water, (2) Food, (3) Clothing, (4) Refuse disposal, and (5) the Separation of Sick from Healthy. At the conclusion Sir John Leach, in thanking the lecturer, said he hoped that what they had heard from Colonel Caldwell would cause them to study a little more the important factor of active service sanitation. Colonel G. D. Bourke, R.A.M.C., who was also present, urged the importance of inoculation as a precaution against enteric fever.

THE TEACHING OF PRACTICAL SANITATION IN INDIA.

The Commander-in-Chief has approved of classes being formed at Rawalpindi, Poona, Lucknow, and Bangalore for the instruction in practical sanitation of junior officers of the Royal Army Medical Corps and Indian Medical Service. Lieutenants of both services on first arrival in the country will be detailed to one of the above stations. The course will last for a month and will be conducted by specially selected officers.

Dr. E. G. Thomas, late civil surgeon to the Guards Depôt, Caterham, on the termination of his appointment has been the recipient of a presentation by the officers of the Brigade of Guards and other friends as a mark of appreciation of his services.

Major Foster, Permanent Army Medical Corps of the Dominion Military Forces of Canada, has been authorised by the War Office to go through a course of instruction at the Royal Army Medical Corps Depôt at Aldershot. Major Foster reported for duty on Nov. 1st.

Correspondence.

"Audi alteram partem."

"PRODROMATA."

To the Editors of THE LANCET.

SIRS,—The word "prodromata," as the plural of "prodroma," has become widely used, doubtless from its resemblance to such neuter nouns as "scotoma," "sarcoma," and the like, but it is wrong. I call attention to it because I am one of the sinners, and so is Osler in his "Principles and Practice of Medicine." We have erred in good company; for instance, in that of Hilton Fagge, and also of one of our most esteemed masters of English, Russell Reynolds, who used it in 1861 and 1855. Clifford Allbutt mentions "prodromata" as an erroneous form in his "Notes on the Composition of Scientific Papers," and throughout his "System of Medicine" "prodroma" is used as a plural word. But it is such only as the neuter of the adjective πρόδρομος and the word is needed in the singular almost as often as in the plural.

I do not know who first used "prodroma." (The New English Dictionary has not yet reached it.) From the fact that it has been generally used as a singular form we may infer that it was introduced to represent the Greek noun πρόδρομή (a forerunning). I think it would be wise to retain it as singular, and to treat it as having become sufficiently English to warrant the use of the plural "prodromas," just as the plural "sarcomas" and "carcinomas" are now in common use. The related adjective "prodromal" is firmly established. This course would be simpler than to try to revive either "prodrome" or "prodromus," used a few times long ago, or to try to introduce "prodromon." In striving to abolish an erroneous form we have to consider what substitute is likely to succeed. The English plural will probably befall all words, sooner or later, which still retain the original form. The word "aura," as the warning of a fit, seems to me to have become so thoroughly English that, in the last edition of my book on "Epilepsy," I have employed throughout the plural "auras."

I am, Sirs, yours faithfully,
WILLIAM R. GOWERS.

Queen Anne-street, London, W., Nov. 3rd, 1906.

To the Editors of THE LANCET.

SIRS,—Sir William Gowers has done me the honour to show me his letter in manuscript and to ask me my opinion. If authors so distinguished, both for matter and form, as Reynolds and Gowers have written "prodromata," we have in it examples of a pardonable inadvertency of minds set upon higher things, yet it is a rather grotesque little companion of human infirmity. Sir William Gowers gives us good advice when he tells us to assimilate foreign words as much as possible to our own tongue; at any rate, as soon as they begin to flow out of narrow technical into more ordinary uses. Thus "carcinomas," "auras," &c., are more than justifiable.

I do not remember "prodroma" as a singular noun, but I daresay it is so used, and may be wanted. If so the needful accommodation is not easy, as πρόδρομή is, of course, not a forerunner, but the act of forerunning. (By the way, are not these English words themselves good enough?) From the ordinary books of reference at one's elbow I get no help. Ducange is never of any use in medicine, and from a few seventeenth and eighteenth century glossaries I learn no more than we all know. On the principle of the least error—if we must use the Greek—it may be well to accept "prodroma" and "prodromas." Perhaps Dr. Payne will speak a decisive word for us.

I am, Sirs, yours faithfully,
Cambridge, Nov. 6th, 1906. T. CLIFFORD ALLBUTT.

THE USE OF FROG SKIN FOR GRAFTING PURPOSES.

To the Editors of THE LANCET.

SIRS,—In connexion with a case reported in the public press to-day (*Daily Telegraph*) where in consequence of a severe burn skin grafting had to be resorted to, and we are told somewhat dramatically that "the arms, legs, and backs of the patient's son, husband, and mother-in-law, the local coroner, doctor, and three nurses" were called upon to furnish the necessary grafts, it occurs to me that the excellent result to be obtained from the use of frog skin instead of human skin for grafting purposes is not adequately recognised by the profession. For more than 20 years the frog has furnished me with grafts in all cases requiring such treatment. I do not advocate this procedure on insufficient grounds. It was, so far as I know, for the first time advocated by a German physiologist, whose name I do not at the moment remember, in or about the year 1884 in an article dealing with the relationship existing between the cells of the human skin and that of the frog.

I was at the time surgeon to a regiment serving in Baluchistan where an obstinate form of ulcer was exceedingly prevalent, so that I had ample opportunity of giving

effect to the suggestion of the use of frog skin for grafting purposes. My first use of it was in my own case. I had suffered for nearly three years from obstinate ulceration of the skin of the foot which had resisted all treatment and steadily refused to heal. When I mention that I consulted several eminent surgeons, among them the late Sir James Paget and the late Sir William Savory, it will be recognised that I had the best advice obtainable. To make a long story short, I commenced using grafts of frog skin in the middle of January, 1885, and in less than six weeks had a sound covering of skin. At the present time, more than 20 years having elapsed, the cicatrix is perfectly sound, and has none of the puckering and stiffness so often seen in cicatrices where human grafts have been used. In fact, it is impossible without very close examination to see the cicatrix at all, and yet the ulcerated surface extended over the dorsum of the foot round under both malleoli and there was only a bridge of skin about two inches in width left at the back of the foot. I was so encouraged by this result that I used frog skin in every case of the kind after that, and at a rough estimate must have used it in some 300 or 400 cases, in all with good results at the time and I doubt not with equally permanent effects, though naturally I have not been able to keep in touch with the patients. I published a note on the subject in 1886 or 1887 and the procedure was specially brought under the notice of the medical services in India by the then surgeon-general, but, I fear, with little result.

My object in writing this letter is to elicit information as to the recognition by the profession of the value of this method of grafting with frog skin. It is so simple and easy and so entirely unobjectionable that I cannot but feel that it shou'd in all cases replace the use of human skin.

I am, Sirs, yours faithfully,

Oxford, Oct. 28th, 1906. GEORGE RANKING.

THE DISPOSAL OF REFUSE WHEN GAS IS USED FOR COOKING.

To the Editors of THE LANCET.

SIRS,—Will you permit me space to say, in reference to your recent remarks on the possible danger to health arising from animal and vegetable refuse not being immediately destroyed in the many houses where gas is exclusively employed for cooking, that, where no such facilities exist for the prompt removal of refuse as are to be found in connexion with most blocks of flats in London, there are more ways than one of dealing with the problem.

In the first place, it is already the practice in some households to do as Mrs. Marshall suggests—namely, to light the "copper" fire daily for the dual purpose of burning refuse and of heating water for "washing-up" and other purposes. This plan, however, is not so completely satisfactory as is the second to be mentioned, which is indeed that which may be strongly recommended on all grounds. This second plan is to instal in the kitchen, together with the gas cooker, a coke-fired boiler connected with the hot-water circulating system. The gas stove can then be always used for cooking, while the coke-fired boiler not only provides the constant hot-water supply, but can also be utilised as a refuse crematorium and will give sufficient warmth and cheerfulness to the kitchen in winter if the fire door is left open, while the kitchen will remain cool in summer if the boiler and the pipes leading from it are well insulated and the fire door is kept closed. This plan has been advocated on several occasions by Dr. H. A. Des Vœux (the treasurer of the Coal Smoke Abatement Society) on the strength of his own experience, but has not perhaps been brought with sufficient prominence before the general public. So far as this company is concerned, I may say that we are taking steps to bring the system to the notice of all our consumers (the great majority of whom are users of gas for cooking) as it is undoubtedly a most excellent one from every point of view—whether from that of health, convenience, comfort, or economy.

The following quotation from a paper read by Dr. Des Vœux at the Conference of Smoke Abatement last December may be of interest to your readers:—

> I believe that it is not you sanitarians who are going to lead the way, but a person much more useful and practical in serving the needs of mankind—I mean our friend who presides in the kitchen, our cook. It is she who has found out that a gas kitchener is essential in a house, and it is she who has discovered its advantages while you have been looking on! But, unfortunately, smoke is still emitted from the kitchen chimney, for in all moderately large houses it is necessary to have a hot-water system as well, and in most houses the old coal range is lighted for this purpose. How, then, can the hot water be supplied? Eight years ago I installed a coke boiler and each year I am more satisfied with it. It has given a magnificent hot-water supply throughout the house at a temperature of about 170° F., and the supply has been so plentiful that I have been enabled to put three hot-water radiators into passages. The cost of this system is from 1*s.* 3*d.* to 2*s.* a week, depending mostly on the price of coke. With a gas cooker and a coke boiler, the difficulties of a hot-water system and the warmth of the kitchen are surmounted. If this system were installed in all the houses in London, the greater part of the smoke from private houses would be prevented.

A third method of dealing with the refuse problem is that of having a special refuse-destructor, heated by gas, in which all rubbish can be speedily destroyed with a small consumption of fuel. We have recently fixed several of these for use in large boarding houses and they would certainly be extremely useful for restaurants, hotels, and large establishments generally, if not for the average household—for which the water-heating, kitchen-warming and refuse-destroying coke-heated boiler is in every way suited.

The pity of it is that the architects and builders have not yet, for the most part, realised that such a thing as a gas cooker exists, although there are few households nowadays in which one is not to be found. When our friends do awake to the fact that gas is rapidly becoming the staple fuel of the London householder, perhaps they will make proper provision for its use in the kitchens as well as in the other rooms of the houses and flats they design and construct. I hope that the importance of the subject may be sufficient excuse for this somewhat lengthy communication.

I am, Sirs, yours faithfully,

D. MILNE WATSON, General Manager.

The Gas Light and Coke Company, Horseferry-road, Westminster, S.W., Oct. 31st, 1906.

To the Editors of THE LANCET.

SIRS,—I have just read an extract from THE LANCET in an evening paper stating that the inability of the gas stove to burn off vegetable and other refuse, with the consequent lack of ashes in the dust-bin, is likely to prove a serious menace to the family hygiene. May I suggest that the ordinary boiler or "copper" (generally unused in the majority of houses) forms a most economical and effective crematorium and gives a splendid supply of hot water at a minimum cost. A few sticks and two shovelfuls of coal will soon bring a copper holding 14 or 16 gallons to the boiling point, after which, cinders, pea-shells, potato-peelings, cabbage-stalks, faded flowers, and all the heterogeneous mass of household refuse can be reduced by slow combustion to ashes. If householders and housekeepers would insist on this being done as part of the day's routine they would find their gas bill very much reduced, for the heating of water runs up the gas consumption terribly. Once brought to near the boiling point the water in the copper will remain hot enough for washing dishes, scrubbing, &c., for eight or ten hours, without the addition of any more fuel than house refuse. The convenience of a constant supply of hot water should commend itself to both mistress, cook, or artisan's wife, while the dustbin is worthy of its name, and holds nothing but ashes and needs to be emptied only when full, instead of every day.

Gas-cookers are not an unmixed good. I believe the penny-in-the-slot stove has almost as much to do with the appalling infant mortality among the poorer class as the compulsory sending of all the *helpful* children to school. Clothes are not aired; the room is not ventilated by a fire; there is no inducement for the mother to sit down and let the baby stretch its little limbs in the warmth; but the "labour-saving" stove is a godsend to the boneless, board-school educated wife, whose maternal faculty (thanks to our legislation) atrophies before it is fully developed. When will the authorities learn the national importance of encouraging maternity, even at the expense of girls with less "education," and more time among the babies and in the home?

I am, Sirs, yours faithfully,

Nov. 3rd, 1906. ELLIS PEYTON.

PURIN-FREE DIETS.

To the Editors of THE LANCET.

SIRS,—In common with many others I read with great appreciation Dr. Harry Campbell's series of papers on the Evolution of Man's Diet appearing in THE LANCET last year. In view of his conclusion that man has reached his present position in the scale of evolution on "a highly animalised diet," his suggestion at the end of his letter in your issue of Oct. 27th is of extreme interest. It might seem

at first glance another case of Saul amongst the prophets to find Dr. Campbell hinting that man's adaptability and skill, coupled with a growing moral sense, may "one day perhaps lead him to refrain altogether from eating that which has once throbbed with sentient life."

Sentimentalism has been defined as an aversion to face realities; it is also laid to the charge of those who feel repugnance in the thought of eating the produce of the shambles. Perhaps it is true that those who are most active in propagating anti-slaughterhouse doctrines bear the concomitant stigmata of the "crank": there was never a cause that has not suffered from the zeal of its promoters. But I have from time to time remarked in circles of ordinary refinement, to whom the advice *pas trop de zèle* has become a rule of life, symptoms of scruples hitherto associated with persons lean of visage and long of hair, who wear soft hats and homespun cloaks. Such expressions as "I am a vegetarian in theory though I find it difficult to become one in practice" have been current among cultured people even before the reports of THE LANCET Commissioner on the Chicago meat industry and "The Jungle" were published.

It may be undue sensitiveness to be affected at the thought of profiting by the vicarious suffering of the lower animals; it is probably true that each living creature is striving to usurp the whole earth with its own progeny (if some "prudent" sections of civilised man be excepted). But if man has really soared so high above the rest of living species, must he be for ever like the rest of nature, "red in tooth and claw," to maintain his survival? I am not one of those who expect to cull the flower from every cotyledon: that is where the enthusiast comes to grief. But I am at one with Dr. Campbell in his belief that the trend of human evolution will gradually lead man away again from his "highly animalised diet," and that without reducing his physique, as some threaten, to the standard of the "pot-bellied Hindoo."

I am, Sirs, yours faithfully,

Hampstead, N.W., Nov. 1st, 1906. J. S. MACKINTOSH.

To the Editors of THE LANCET.

SIRS,—The great importance of the subject leads me to ask to be allowed to add a few supplementary lines to my letter under the above heading in your issue of Oct. 20th, p. 1095. At that time I believed that Dr. W. A. Potts, in describing the Japanese "at the period of their grandest achievements" as vegetarians, was wrong. I have verified my belief and I can now state on the best authority that in the war between Japan and Russia the dietary of the Japanese soldier comprised a daily ration of meat, fresh or preserved. Moreover, to quote an official excerpt, "when the supply of cattle or fish or fowl is abundant at the place where the troops are quartered the ration of fresh meat may be increased by the authority of the general officer commanding." The other constituents of the Japanese soldiers' diet appear to be abundant and varied, and it is noteworthy that the officer and private are allowed the same free rations.

I am, Sirs, yours faithfully,

Worthing, Nov. 6th, 1906. WATKIN W. JONES.

To the Editors of THE LANCET.

SIRS,—Dr. Harry Campbell does well to call attention to the chaotic state of the food question. I wish he could see his way to put things in their true positions and hold even balance between conflicting theories—he would earn the gratitude of all general practitioners. For a long time, under the influence of the Haig theories I induced—I may say implored—many patients to submit to his somewhat frugal rations. I had many satisfactory results. One day at a Masonic banquet I sat next to a distinguished food specialist, and whilst we consumed purins and other dainties he referred to Haig's theories, pronouncing his chemistry all wrong and his conclusions absurd. Too ill-informed fully to understand, much less refute, his arguments I could only suggest leaving the matter to time the great arbiter. But, alas, the iron of doubt had entered my soul and my patients were soon treated to such purin-infected dainties as sweetbreads, &c.

Still seeking after truth I came across Rabagliati's book, "Air, Food, and Exercise." He, you may remember, is of the carboniferous school and attributes a large number of diseases—from eczema to cancer—to an excess of carbonaceous material in the diet. Whether in this connexion after reading Hare's work "The Food Factor in Disease," I shall get more light or more confusion remains to be seen.

Finally, I was much impressed with Dr. W. A. Potts's article, "Notes on Purin-free Diets," and promptly took it to a lady patient of a scientific turn of mind. Unfortunately, I was not prepared, as I ought to have been, for her first question, "What are purins?" I could only murmur that they were chemically allied to certain products contained in urine. Of course, this reply was not too happy and perhaps a little hard on the purins.

In all fairness I must now take her Dr. Campbell's letter, lest perchance I may have started the household on some unhappy gastronomic experiment. Everything Dr. Campbell writes is thoughtful and suggestive and nothing more so than the concluding lines of his letter. He says: "And it is this adaptability and this skill [in cultivating and preparing food], *fortified by a growing moral sense* [the italics are mine], which will one day perhaps lead him to refrain altogether from eating that which has once throbbed with the pulse of sentient life. This may come: this ought, I think, to come." Now, there is no ambiguity about this: it is the voice of the "gentle" Buddha. The same compassion of the strong for the weak and lowly placed: for those who, like ourselves, are "on their upward way." And if a growing "moral sense" shall so influence man in regard to his food, will it not also influence him in regard to experimental research? Then, where will vivisection be? And how stands Dr. Campbell in regard to it?

I am, Sirs, yours faithfully,

Oct. 29th, 1906. J. S. B.

THE WORKMEN'S COMPENSATION BILL (AS AFFECTING THE GENERAL PUBLIC).

To the Editors of THE LANCET.

SIRS,—By your courtesy I was enabled in THE LANCET of Oct. 13th to place before the profession the purely medical aspects of the above Bill, but it has occurred to me that it may be of interest to many of your readers to have before them the points of the Bill which will affect the general public who are either employers or employed.

I presume that most of your readers have in one way or another become acquainted with the present Act during the eight and a half years it has been in force; I need not therefore do more than refer to those parts of it which are either repealed or altered in the Bill which is now being considered by the House of Commons. Nearly all the limitations of the present Act, which have proved to be such fruitful sources of litigation, have been swept away. It will no longer be necessary for a workman to be employed on a building in course of erection exceeding 30 feet in height, or on a scaffolding, or where machinery is used, for him to be able to claim compensation for personal injury by accident occurring to him when in course of his employment. By the present Bill every employer will have to compensate any employee of any kind, workman or not (with certain exceptions), who is receiving wages or salary amounting to £250 per annum or under who is injured by accident in the course of his employment, paying him half wages during his total disability, such half wages not to exceed £1 per week. These payments will have to be made as long as the total disability lasts, unless they are commuted by arrangement under certain regulations. If the disability continues but the employee is able to do some lighter work than he was able to do before the accident the weekly payment may be reduced by a county court judge, proportionately to the lighter work the claimant is able to do. A medical referee will in disputed cases assess a claimant's power of work and his decision will be final. In the event of death resulting from injury by accident the employer will have to pay to the workman's dependents a sum equal to three years' wages or £150, whichever of these sums is the larger, but not exceeding in any case £300. Under the Bill the extension of scope is so much beyond the present Act, and is of such importance to all, that I think it better to quote Clause 13 *in extenso*.

"Workman" does not include any person remunerated by salary at a rate exceeding £250 a year, or a person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's trade or business, or a member of a police force, or an outworker, or a domestic servant, or a member of the employer's family dwelling in his house, but, save as aforesaid, means any person who has entered into, or works under, a contract of service or

apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise, and whether the contract is expressed or implied, is oral or in writing.

It will be seen from this that medical assistants and dispensers, clerks, shop assistants, and travellers, as well as workmen of all kinds, grooms and gardeners, will be able to claim under the proposed Act. I suppose also curates, tutors, and governesses, who are certainly not domestic servants, will also be able to claim.

From the foregoing it will be seen that if the Act comes into force on Jan. 1st, 1907, as is proposed, a very large number of medical men will have to insure, unless they like to take the chance of being rather heavily hit. Luckily, I believe the rates of insurance will not be prohibitive, but after the passing of the Act certainly it will be wise to inquire what premium will cover any individual risk and to obtain a policy of indemnity if possible. I would urge, however, that until the Bill has passed medical men should retain an open mind and not in any way promise to insure with any particular agent or insurance office. The rates of premium have yet to be fixed and many questions will arise that will need careful consideration.

I am, Sirs, yours faithfully,

ALBERT BENTHALL, F.R.C.P. Edin., &c.

South Hampstead, N.W., Nov. 1st, 1906.

"THE PROFESSION" IN PUBLIC ESTIMATION.

To the Editors of THE LANCET.

SIRS,—The profession owes Sir Dyce Duckworth no small debt for plainly stating its social decadence. If he suggests no remedy, it is perhaps because the remedy is obvious. The British public, in spite of all its present literary shortcomings, retains a wholesome reverence for general education, and a profession whose standard of general education at entry is no better than that of the pharmaceutical chemist and veterinary surgeon need feel no surprise or displeasure at being classed with its literary equals. A great deal of nonsense is often talked about the educational value of the medical curriculum and about the mind deriving an equal, though a different, culture from "science" and from "the humanities." The effects of the two on the mind are absolutely distinct. To attempt to replace "the humanities" by "science" is just as sensible as the reverse process, and is much the same as to discard one's necktie because one has bought new bootlaces. "An educated man" in the old English sense will never be produced by cutting up frogs or making smells in a laboratory. He can only be produced—as he always has been produced—by a study of the experience of the past, of the greatest thoughts and deeds and lives of the race, and by letting the mind dwell most, during its most impressionable period, on noble and beautiful things. If the profession wishes to be thought a profession of "gentlemen" let it insist that those now entering it shall have the traditional "education of a gentleman." Much as the General Medical Council has done to improve medical practice in this country, its deplorable weakness, in permitting the educational, and therefore the social, decadence of the noblest of callings, is something which cannot be condoned.

I am, Sirs, yours faithfully,

Exeter, Nov. 3rd, 1906. W. GORDON.

THE WORKING OF THE SALE OF FOOD AND DRUGS ACTS.

To the Editors of THE LANCET.

SIRS,—The annotation on this subject in THE LANCET of Nov. 3rd appears to require both a correction and an amplification. The correction refers to the alleged "difficulty of" a private purchaser "complying with the requirements of the Act in regard to the formula to be observed at the time when the purchase is made." Your contributor has lost sight of the important judgment given in Buckler *v.* Wilson, (1896) 1 Q. B. 83, in which it was clearly laid down that the purchaser of a commodity *for consumption* can send the same, or part thereof, for analysis and take proceedings under the Acts, without going through the "formula" of declaration, division of sample, &c., prescribed by Section 14 of the Act of 1875. Moreover, it appears that it is not necessary that the analysis should be made by the public analyst of the district as required by Section 12 of the same Act. A lucid annotation on the point, too long to be quoted here, is to be found in Bell and Scrivener's "Sale of Food and Drugs Acts" (p. 38, ed. 1900), which makes the above contention clear and gives a list of the cases prior to and since the case quoted. The amplification which I would suggest is a reference to the provisions of Section 14 of the Act of 1899, under which the purchaser of any commodity (food or drug) can obtain the services of the local inspector, who will *on request* take a sample of the commodity on delivery at the purchaser's house. I have frequently directed attention to these provisions and think it is a misfortune that so little (practically no) use is made of them. That there is scope for work under the section is, I think, amply demonstrated by the figures given in your annotation.

I am, Sirs, yours faithfully,

Maida Vale, W., Nov. 3rd, 1906. REGINALD DUDFIELD.

*** Our correspondent is right. It was decided in 1896 that the provisions of Section 14 do not apply to the case of a private purchaser *purchasing for consumption*. When, however, a sample is taken by an official purchaser for analysis the provisions of Section 14 must be strictly complied with. We agree with our correspondent and repeat what we said in the annotation referred to that "it is a pity that 'customers' do not more often submit samples to analysis."—ED. L.

INFANTILE MORTALITY AND GOATS' MILK.

To the Editors of THE LANCET.

SIRS,—In my paper on Infantile Mortality and Goats' Milk published in your issue of Nov. 3rd I stated that the infantile death-rate of Italy was 66 per cent. less than that of our own country and that of Norway was 44 per 1000. I find that my information was incorrect and that the figures should be 14 per cent. above and 75 per 1000 respectively. These alterations do not affect, however, the validity of my arguments in support of the feeding of infants on goats' milk as opposed to sterilised depôt milk.

I am, Sirs, yours faithfully,

Glasgow, Nov. 5th, 1906. WILLIAM WRIGHT.

ANOTHER CASE OF ACTINOMYCOSIS.

To the Editors of THE LANCET.

SIRS,—It is rather significant that a day or two after I had corrected the proof of a paper on a case of actinomycosis of the cheek I should meet with another case of the same disease also on the cheek. This appears to offer a proof that it is necessary to be familiar with the external appearances of the swelling caused by this disease in order to recognise the disease in its earliest manifestations. I shall give a brief history of the case and shall no doubt be able to supplement these notes at a later date when the patient has had an opportunity of benefiting from the administration of iodide of potassium.

Last August the patient, a man, aged 22 years, noticed a swelling on the inner side of the left cheek which after a week or ten days discharged into the mouth; the swelling diminished somewhat in size but did not altogether disappear; it left two hard nodules on either side of the opening. About Oct. 17th he noticed that the induration around the lumps was increasing in size and shortly afterwards two nodular masses appeared on the outer side of the cheek midway between the upper and lower teeth; these gradually became larger until the lower one began to soften and point outwards. He consulted me on the evening of Oct. 25th and the following appearances were noted. His height was 5 feet 4 inches and he weighed 8 stones 4 pounds. The teeth on the lower jaw were decayed, especially on the right side; on the left side two lower molars were missing; one rather rugged stump was situated close to the area of the early abscess in the mouth; the mucous membrane was puckered and cicatricial between the upper and lower teeth. Externally there was a large indurated swelling situated between the two jaws and extending down to the lower border of the lower jaw, irregular in outline, and having two nodular swellings of about the size of a small nut situated one above the other;

the lower swelling gave fluctuation on palpation and evidently contained pus. The patient refused to have the abscess opened, so he was ordered to apply fomentations of boric lint and return next morning. Early next morning he reported himself; the abscess was almost through the skin and slight pressure was all that was necessary to get a specimen of pus. This was characteristic; it contained large numbers of yellow granules; a specimen was taken to Dr. G. L. Eastes who reported as follows: "This pus contains streptothrix actinomycotica."

On Oct. 26th the suspicious stump was extracted under nitrous oxide anæsthesia; the bleeding was fairly copious and continued during the night but had ceased by the following morning. The patient was at once put on to iodide of potassium, five-grain doses every four hours; this was increased next day to ten grains. In three days the swelling has diminished considerably in size, no doubt as a result of the free discharge of pus from the small abscess which opened externally. The temperature was elevated in the evening to 102° F. and is usually about 100° in the morning. The lungs and other organs so far as one can judge appear to be normal. The prognosis is favourable and the patient should soon show marked signs of improvement.

The interesting point in this case is the source of infection and as a result of very careful cross examination I obtained the following facts which I give for what they are worth. The patient has lived in London for over three years; the first two years were spent in Battersea Training College for Teachers; the last year has been spent for the greater part in Tottenham. September and October he has resided in Highgate. He has been in the habit of spending his vacations at his home in Brightlingsea. From June 2nd to 5th he spent a short holiday at home and at that time he had no knowledge of having anything the matter with his mouth. He states that during the hot weather he had been in the habit of plucking stalks of grass and grain and chewing them thoroughly and recollects having on several occasions pushed the stiff stalk between his teeth. He has been in the habit of doing so for years at odd times. His next visit to his home was early in August and it was while there that he had the abscess and discharge in the mouth.

Obviously the period of infection cannot be associated with the August visit, but there are strong suspicions that if he were infected in this way it might have taken place during the short visit in June. It is also possible that he may have been infected at an earlier date and in a different manner, but I give the facts as I found them and am anxious to attach due importance to them. This is the one case in four which I have had under my care where I have been able to get any history of straw or grain chewing on the part of the patient. It would be interesting to find if the disease is at all prevalent amongst cattle in the vicinity of Brightlingsea and no doubt when this letter is published some of your readers in that locality will be good enough to supply me with information on this point. If by chance the disease is detected in any part of the country it might also be possible to get the organism in its vegetable host. Apologising for troubling you at such length, I am, Sirs, yours faithfully,

Highgate, N., Oct. 30th, 1906. ROBERT KNOX.

A DEMONSTRATION OF HYPNOTISM.—A demonstration of hypnotism was given by Dr. Edwin Lancelot Ash at a meeting of the Psycho-Therapeutical Society held at Bloomsbury Mansions, Bloomsbury, W.C., on Nov. 5th. The audience which was a fairly large one, included members of the medical profession. The lecturer, after giving a general description of hypnotic phenomena, placed his subject, a young man, in a trance and showed that he was amenable to suggestions offered to him. Dr. Ash warned his audience against the danger of treating diseased conditions of the body by hypnotic methods unless the operator was qualified to diagnose disease. At the present time, he said, we were only playing, in his opinion, with a great force which we did not understand and which we were not able to control fully. Much harm was done by ignorant people using hypnotism in cases where surgical interference was necessary and in this way not only was discredit brought upon the investigation of hypnotic and allied methods but lives were actually sacrificed. He pointed out that the diseases which could be influenced by suggestive methods were the so-called functional diseases and not those associated with organic changes.

FREE AND COMPULSORY FEEDING OF ALL SCHOOL CHILDREN AT VERCELLI.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Vercelli, Italy, October.

IN the Fabian tract No. 120, entitled "After Bread, Education," p. 9, occurs the following passage: "There is a little town in Italy, Vercelli, where this policy is carried out with logical completeness. There attendance at meals is as compulsory as attendance at the school, unless a medical certificate is produced to show that feeding would be injurious to the child." This was so startling an announcement that I at once determined to seize the first opportunity of verifying the facts on the spot, particularly as the pamphlet in question gives no further information on the subject. Vercelli is just half way on the main line of railway between Turin and Milan. There was consequently no difficulty in proceeding to that town after I had completed my visit to the Milan exhibition, schools, and slaughter-houses. Vercelli is what in England would be described as a sleepy little town with the grass growing up between the pavement stones of some of the streets. But it has a cathedral and, what is more interesting, a church dating from 1219 and the early Gothic of the interior is well preserved. The last edition of Baedeker sets down the population of Vercelli at 17,900, but I found that the inhabitants were quite indignant at this assertion, maintaining that 30,000 would be nearer to the correct figure. In any case there are many educational establishments, and twice a week the town does seem well peopled, for these are the market days. Farmers from many miles around then come to buy or to sell, notably the rice which is extensively grown in this part of the country. Considering the very rural character of the town, the absence of any large industry, and the slight contact of its population with the great centres of political thought and activity, it was scarcely to be expected that such a place as Vercelli would take any very daring initiative such as is suggested by the heading of this article. It has, however, done so and this as the result of party politics. Such political considerations are outside the scope of those who deal with the question from a purely scientific point of view, but their results demand attention.

In pursuit of my inquiry several documents were submitted to me and notably the report sent by the Vercelli municipality to the Educational Department of the Milan exhibition. They were far too lengthy to attempt anything more than a brief summary of some of the leading points. From these I gather that on April 19th, 1900, the municipality of Vercelli appointed a special committee with the mayor for president. Signor Pietro Lucca, the representative of Vercelli in the Italian Parliament, was the chief instigator of this measure and he explained that the committee was nominated so as to study how education as well as instruction could be imparted to the children attending the primary schools. The law rendered education compulsory but it left the local authorities free to select the means by which education was to be enforced. The debate and the arguments were all devoted to the question of education as distinct from instruction. The instruction given was judged satisfactory, but the education was very deficient. Attendance at school was obligatory, yet some parents were too poor to send their children. They could not provide them with food or with books. Therefore measures had already been taken to supply books and stationery, at least in the elementary classes. The principle of assistance in kind had thus been established; there was no legal objection to its more extensive application. By the aid of municipal subventions and of charitable donations the poorest children had received some instruction and the object now was to educate them. The committee then came to the conclusion that the most practical method of education would be to provide a midday meal. It was not a question, as in England, of starving children and of physical degeneration, nor was it a question of mere instruction, of the mere learning of lessons; it was a question of education in the higher sense of the term, of moral education, of education in the art of *savoir vivre*. The teachers had urged that during class hours there was no time or opportunity to educate the children in the principles of etiquette and

politeness which are all based on the great moral principle of unselfishness. To find time for such a purpose it was necessary that the children should not go home in the middle of the day, but should remain at school and be taught how to behave during recreation hours and at table. As matters stood, on leaving school and once in the street, the children soon acquired objectionable and rough habits and bad language. Parents could not fetch them away from school and during these two hours in the middle of the day they got into all kinds of mischief.

It was easy to understand that if the children were kept from the street and if their meals and their play-time were under the kindly and intelligent surveillance of the teachers their manners would improve. The masters also urged that it was easier to study a child's character and to ascertain what were his natural capacities during play-hours than in the class-room. But, on the other hand, how were the children to be fed? The parents had not the time or the means to take meals to their children at school. Then if the parents were, in some way or other, to give food to their children there would be painful contrasts. Some children would bring with them ample provision, others the meanest of fare. Another important consideration was the fact that if in winter when it was cold and wet the children had to go home for their midday meal they travelled backwards and forwards four times in the one day. This caused too much exposure and consequently a considerable amount of sickness among the children. Therefore it had already been recognised as indispensable to feed at least those children whose homes were a long way off. A charity had attended to this. The number of children who required feeding was, however, greater than the charity could support with the slender funds at its disposition. Therefore the municipality had added in the first instance an annual subvention of £40, then of £80. Thus it was the Charitable Committee of Patronage which took the first steps for the feeding of the school children of Vercelli, but it only attended to those children who lived so far away that they could not easily return home in the middle of the day. Subsequently it attempted to feed all the children during the colder months of the year. This was but an experiment and its success was rendered difficult for want of money.

Many different proposals were made. Some urged that all parents who had sufficient means should be compelled to pay for the meals which their children took at school. The majority of the specially appointed committee and generally of those who discussed the matter did not agree with this. They said that the feeding of the children could not be considered as a charity. This idea of charity was degrading and therefore mischievous. If education was compulsory, and the law had rendered it compulsory, then all that was necessary for education must be given. Now it was recognised that the sort of education which could be given only at meal times and during the recreation hours was as necessary as the mere teaching from books during the class hours. Therefore, the provision of means of recreation and of the midday meals formed an integral part of the general scheme of combined instruction and education. Throughout, the argument raised was not that the children were starving but that every endeavour must be made to teach them to live in the spirit of good fellowship. For this reason objection was raised to any interference on the part of the parents, as this might create rivalries, jealousies, and a sense of inequality between the children. Already in regard to books and stationery great care was taken not to humiliate poor children. The rule is that children of the fourth-class should pay 7 lire a year for their books. The poor, however, get these books for nothing but care is taken to explain to the child that the books have not been given to him, that they belong to the municipality and are only lent. In a word, there is a free library at the disposal of those scholars who for one reason or another cannot buy their own books. In due time these lesson books must be returned. In regard to copy-books the child must show that he has kept his copy-book in good condition before he gets another one, and here we find a practical lesson in tidiness. It was in the neighbouring small commune of Viverone, where Signor Lucca, the Member for Vercelli, has his summer residence, that the books were thus first lent.

Signor Lucca's idea seems to have been to endeavour so to educate children as to efface in their minds all trace of that "class war" which Socialists maintain cannot be prevented except by the advent of Socialism. The free meals were to be given not because the children could get no food but as a means of instilling in their minds sentiments of brotherhood. Hence the partaking of this meal was to be obligatory, as well for the rich as for the poor. By daily taking a meal, and identically the same meal, together and then playing together the children would receive education in good manners in their civic duties and be made to understand that they all belonged to the same community and had duties to perform towards that community.

Thus it will be seen that the purport of the free meals was absolutely different from that which has brought the question of the feeding of school children before the British public. At Vercelli it was not a question of supplying to the children the food necessary to prevent starvation and physical degeneration. This, it was believed, the parents did, with but a few exceptions, in a sufficiently ample and satisfactory manner. But it was felt that children could not be kept at school from nine in the morning till four in the afternoon without food. The morning classes lasted two and a half hours. So the question put was the amount of food necessary not to feed a child but to compensate the waste of energy incurred during two and a half hours of schooling. Experiments have been made which set forth that the waste of calories and nerve energy during two and a half hours can be compensated, according to the age of the child, by from 100 to 140 grammes of bread with 20 grammes of cooked *salame*, or 14 grammes of raw *salame*, or 20 grammes of cheese. This quantity has been fixed by various physiological authorities and it is also considered that this dry food is better than soup. Then practically it is not so difficult to distribute as soup. Such a meal ought not to cost more than 7½ centimes, or ¾*d.*, per child. When a meal of this description was first given to all the children at Vercelli, but only during the winter months, it cost the municipality 13,000 lire, or £520.

An important consideration is the fact that the use of dry bread, of sausage, or cheese dispenses with the necessity of knives, forks, or spoons, and even of plates. But the absence of these table utensils very much lessens the opportunity of teaching good manners while the children are eating. There are consequently advocates of other than dry meals and they propose to spend more money so that a proper hot meal shall be supplied. As matters now stand, during the sixth year (1905–06) of the present experience the number of pupils attending the Vercelli primary schools was 2260; this includes pupils from the suburbs. The hours last year were from 9 A.M. to 3 P.M., with one and a half hours' interval commencing at 11.30 A.M. The pupils of the fifth and sixth classes did not receive free meals. Those of the fourth class had 140 grammes of bread, those of the third 122 grammes, and the first and second classes 100 grammes. Being a Roman Catholic country they had 20 grammes of cheese with the bread on Fridays, but on the other days meat was given with the bread in the form of 14 grammes of uncooked or 20 grammes of cooked *salame* sausage. The masters and mistresses have to eat the same food in company with their pupils, but they are allowed twice the amount. This is a guarantee, for they would complain if the quality of the food was not good. Each ration has in practice cost from 7 to 8 centimes. At the beginning of the day the master or mistress draws up a list of all who are attending his or her class. Three copies of this list are made. One the teacher keeps and the two others are sent to the *economo;* that is to say, the financial manager at the educational department of the municipality. The latter functionary keeps one of the lists to register and the third is sent to the kitchen or the purveyors. At 10 o'clock the rations are prepared. The food must be of the first quality. It is inspected every day by the financial manager and occasionally by the medical officer attached to the schools. The scale for the rations given at Vercelli is also adopted by the management of the schools at Pavia, only at Pavia the sausages are taken whole to the schools and cut up by the masters. At Vercelli the contractor cuts the sausage up himself and places the right number of thin slices for each ration in small pieces of white paper. These are all first taken to the town hall, where the inspector every day weighs some of the rations and tests them by the sense of colour, smell, and taste. As, whatever else he may ignore, every Italian knows the difference between good and bad *salame*, the question I ventured to put that such a test might not, scientifically speaking, be considered sufficient, only elicited looks of scornful surprise. Contracts have been made with two

tradesmen for the bread, with one for the sausage, and with another for the cheese.

Before the midday meal was thus definitely organised and when meals were only given during the bad weather a good many pupils failed to attend school during the spring. They remained at home helping their parents to work in the fields. So general became this practice that the examinations were held in April to enable the rural children to get away. It is claimed that now there is food to be had at school these children are willing to remain till the end of July if necessary and thus obtain a much better education. The population of the schools may be roughly divided in three equal parts. The first is not poor, the second is not well off or rather poor, and the third is really poor. For the children of the first of these three classes the simplicity of the meal given may almost be considered a hardship. They would willingly pay if they could be allowed to have a hot meal, but it would destroy the purpose of the free meals if money could purchase any sort of privilege. So rich and poor must be fed alike and if any child refuses to eat the medical attendant is sent for. Some 10 per cent. of the children, mostly the richer children, have contrived to get medical certificates giving them permission to go home and exempting them from attendance at the communal meal. Thus for the month of December last the attendance at school showed that 22,298 meals should have been served but the actual number of meals consumed amounted to 20 023 and that represents, in round numbers, 10 per cent. of absentees.

Further to prevent class distinctions between the children and also, as a secondary consideration, to keep them warm, a certain amount of clothes is provided at the public expense. The municipality supplies raw material to the sewing classes. They make chemises, petticoats, bodices, handkerchiefs, drawers, woollen socks and stockings, &c., which the poorer children wear. More than 500 such articles were produced in the course of last year.

All this, however, has not been accomplished without considerable opposition and many difficulties. Notably the interests of the teachers had been completely forgotten. These at best are paid most miserable salaries. For the first four to five years they receive £40 a year and after that the increase is only to £48 per annum. For this they are to teach five days a week during ten months of the year. But with the new conceptions that the meal hour and the recreation time were the most fruitful moments for educating the children, the teachers found themselves deprived of the leisure which they used to enjoy in the middle of the day. At last a compensation has been granted but it only amounts to £2 per annum. This is obviously insufficient. It is also becoming evident that the meal given to the children is insufficient. It may, according to the chemical and physiological theories, suffice to supply the average number of calories lost in two and a half hours' study, but it does not suffice to satisfy the children of the well-to-do classes who are accustomed to much better fare at home and still less does it satisfy those who are insufficiently fed at home. So both rich and poor desire better meals and it is now all but decided that kitchens shall be provided and hot and complete meals prepared. On the other hand, it is not yet decided who shall pay for this. The feeding of the children last year in reality cost some £1200 though the meals did not exceed an average of ½d. each. What would it be if hot meals were served? At least double this amount. At the present moment a reaction is taking place. There is an attempt to re-introduce the charitable element, to make the wealthier section of the community pay for the meals of their own children and subscribe for the meals of the poorer children.

The situation also is complicated by the fact that a different system prevails in regard to a large infant school—that is, a mixed school of boys and girls from three or four years old up to the age of six. At a cost of £12,000 derived from endowments and donations a magnificent new school has been built for these very young children and was inaugurated on the day of my visit. It is quadrangular in shape, with a large central court. In one part of the building a spacious dining room is provided, with broad windows on each side. There are a number of low tables with circular holes in them in which the bottom of the soup plates fit. The children were all dressed in bright light-blue or pink check pinafores and had a plateful of *minestrone* set before them. As this was the first day, the cooking range used and the cauldron had not been properly manipulated. Nevertheless, the *minestrone* was tasty. In it were bacon, a large quantity of rice, and carefully selected flavouring of onions and aromatic herbs. There are in this school large recreation rooms for the children to play in when the weather is bad. Baths and douches are also provided and there are much air, space, and light.

Several hundred little children are gathered together here; they belong to all classes of the community, there is not the slightest difference in their appearance, and all are treated exactly alike. This school, however, is conducted on the theory that the parents should pay for the midday meal. It is a better meal, a hot meal, but each parent is supposed to pay 1*s.* 3*d.* per month per child. A considerable number of parents, however, fail to make this payment so the municipality is obliged to grant a subvention to supply the difference. Then to complicate the situation further there are voluntary subscriptions, so the children are fed partly by the money paid by their parents, partly by charitable donations, and partly out of the public purse by means of a municipal subvention. Yet there are not a few persons at Vercelli who are satisfied. They think the result is good even if the means employed are illogical and contradictory.

Unfortunately, the whole situation at Vercelli is dependent upon political considerations and the theories of Signor Lucca are criticised not always on their merits but from the point of view of his political opponents. It is a great source of weakness that such questions should be influenced by party politics.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Physique of Manchester Recruits.

THE returns of the Manchester Recruiting Depôt for the year ending Sept. 30th, 1906, make somewhat depressing reading. Only 534 recruits were passed into the army and 521 into the militia, the percentage of rejections for faulty physique being, it would seem, on much the same wholesale scale as prevailed at the time of the South African War.

Impure Milk and Infant Mortality.

Colne has been passing through a severe epidemic of infantile diarrhœa, last quarter's return showing that the infant death-rate equalled 283 per 1000 births. Deducting the deaths from diarrhœa it was 97. Early in September the epidemic was so severe that the medical officer had a sample of milk analysed, with the result that the sediment showed decided evidence of want of cleanliness. To this and to the carelessness of the mothers the epidemic was attributed. Preston also has been discussing the abnormal infantile death-rate of the past summer and Dr. J. Rigg considered it due to contamination of milk during milking and in the course of distribution. He said that the law as to the supervision of milk production was ten years behind scientific research. Dr. Brown suggested that milk should be sold in bottles which could be re-sealed after a part had been taken out and then put into cold water. He objected to sterilised milk as its nutritive properties were interfered with and he went on to say that all they might do with tubeless bottles and sterilised milk would be upset so long as dummy teats were used. These were "put on the tables among the dirt during meal times and were dropped on the floor by the children, thus gathering up bacteria to such an extent that millions of germs got into the child's stomach in half an hour." The practice of careful cleanliness in the treatment of milk is not understood by the ordinary farmhand and the further processes during distribution expose it to such frequent liability to contamination that perfectly pure milk must be a rarity.

The Opening of the Leigh Infirmary.

Oct. 27th was a great day for the town of Leigh, when the infirmary was opened with much ceremony and almost mediæval rejoicing. For there was a procession with brass bands, volunteers, firemen with their fire engines, tradesmen's turnouts, aldermen, councillors, magistrates, and trade union representatives. An infirmary has long been wanted, for till now "accidents" had to be taken to Manchester, Bolton, or Wigan. The scheme originated in a rather curious bequest by a lady who, 20 years ago, promised £1000 in her will provided an infirmary was built within 21 years. This period of incubation seems to have gone on

very quietly till about 18 months ago, when subscriptions began to come in well, so that on the cost of the building, about £17,000, there is only a deficit of some £3000. There is provision for 30 beds and as the chairman said that each bed would cost £70 yearly for maintenance £2000 a year would be required if all the beds were utilised but this was not likely at present.

A Sanitary Experiment.

The Crompton district council has made arrangements to connect untrapped sewers with mill chimneys. The proposer of the scheme said, truly enough, that untrapped gullies allowed sewer gases to escape but if there were inlets to mill chimney galleries they would be the means of clearing the sewers of gas.

Death from Drinking Rum.

A disgusting story of the manners and customs of some, happily exceptional, people in our northern world illustrating a not very common phase of the drinking mania comes from Sunderland. Three men are said to have induced a cabman to drink three gills of rum at short intervals. He drank the first and in five minutes a second gill, and shortly afterwards a third, after which he dozed off till two men took him into the yard. Soon after drinking the second gill he said he could "mop" seven or eight. The landlord said that he had known this man to drink six or seven "small whiskies" many a time while the clock was striking six—one for each stroke of the clock. At the inquest the landlord said that when the man was asleep in the yard he tried to give emetics without success and then got two medical men to see him. It would have been more to the purpose if instead of trying to get it back he had interfered to prevent the rum being taken.

Nov. 6th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Formation of the West Riding Glasgow University Association.

FOLLOWING the example set by the graduates of the University of Aberdeen resident in the West Riding of Yorkshire, the alumni of the sister University of Glasgow have just instituted a society having similar aims and aspirations. The society was inaugurated by a dinner on Oct. 24th, which was presided over by Dr. J. Irving of Huddersfield. The chief guest of the evening was Sir William Macewen, professor of surgery at the University, and the dinner was attended in all by 61, many of whom had been students of Sir William Macewen and some of whom had been classfellows, while among the guests invited from beyond the circle of the University were Professor A. S. F. Grünbaum, Professor T. Wardrop Griffith, and Professor H. Littlewood, of the University of Leeds, Dr. T. Churton and Mr. E. Ward of Leeds, and Mr. P. MacGregor of Huddersfield. In responding to the toast of his health, which was proposed by the chairman, Sir William Macewen received an enthusiastic ovation but his reply was all about the University and nothing about himself. He gave an interesting account of the connexion between the famous brothers Hunter and the University and showed by historical references the widespread influence which the University had had for centuries on the intellect and material prosperity of the country. The society thus started in an auspicious manner may reasonably be expected to be prosperous and useful.

The Public Dispensary.

In consequence of the resignation of Mr. Sydney Clark a vacancy was created on the staff of the southern branch of the dispensary—namely, that of honorary medical officer with charge of medical patients, and the vacancy has just been filled by the appointment of Dr. Algernon E. L. Wear. Applications are being invited for the position of honorary pathologist to the institution, Dr. O. C. Gruner who was the first to hold the post, having found it necessary to resign in consequence of his increasing duties at the infirmary. A vacancy has also arisen on the dental staff, Mr. Henry Carter, one of the senior dental surgeons, having just resigned. Mr. F E. Kendall, M.B., Ch.B. Leeds, has been appointed fifth resident medical officer.

Nov. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Proposed New Dispensary in Glasgow.

IN THE LANCET of Oct. 20th it was mentioned that at a public meeting held on the initiative of the Lord Provost in the City Chambers it had been proposed to found a new public dispensary for the benefit of the necessitous poor in the Anderston district of the city. In connexion with this proposal a large number of medical men practising in the locality have prepared a memorial which is "submitted for information to all who may be interested." It sets forth: "Most of us have been in practice in the district for many years and know intimately the social circumstances and medical necessities of the people. They are not so poor as has been represented and although some are improvident they are mostly in regular employment. The district is in close proximity to the great modern dispensary of the Western Infirmary which is completely equipped for dealing with all forms of disease. For the poorest section of the population, which is comparatively small, the dispensary of the parish council in St. Vincent-street is open at suitable hours and the parochial medical officers of the district also visit patients at their homes and provide medicine and nourishment as required. We, in the course of our practice, have always considered it our duty to advise patients to obtain special treatment, when necessary, at the dispensary of the Western Infirmary or other medical institutions and have willingly obtained lines for the admission of serious cases to the wards. In regard to infantile mortality and consumption we have endeavoured heartily to coöperate with the public health authority. With the exception of the report in the newspapers we have heard no expression in the district of any need for a dispensary there and regret that the promoters of the scheme have not considered the advisability of conferring with us regarding the proposal. As the new dispensary of the Western Infirmary and the recent extension of the infirmary itself have involved the expenditure of large sums of money we beg to suggest to the benevolent public that they should direct their subscriptions to that or similar institutions. At the present time the Royal Infirmary and the other medical institutions in the city stand sorely in need of funds to carry on their beneficent work, and we think it would be a great pity to expend the money of philanthropic people on any new dispensary in this district where it is not required."

Compulsory Notification of Consumption in Glasgow.

The health committee of Glasgow unanimously recommended to the corporation that compulsory notification of pulmonary tuberculosis should be adopted for a period, to be afterwards determined, and that it should be remitted to the subcommittee on tuberculosis to consider and to report on the expediency of carrying out the recommendation either by way of resolution adopting *simpliciter* the Infectious Diseases (Notification) Act, 1889, as applicable to such disease of pulmonary tuberculosis or by way of private Bill or Provisional Order to be promoted by the corporation, specifically providing and defining the manner and extent of treatment of notified cases by the corporation. At a meeting of the town council, where the recommendation came up for discussion, it was pointed out that so far back as 1891 the subject had been mooted, but the late Dr. J. B. Russell, at that time medical officer of health, was opposed to it. Since then circumstances had altered and the present time seemed opportune for initiating compulsory notification. The supporters of the recommendation took care to emphasise, for the benefit of those people who are advocating compulsory notification with a view to the corporation being forced ultimately to the treating of every case of consumption in the city, that in their opinion the time has not yet come for anything like that. If notification meant the equipment of hospital accommodation for all persons in the city suffering from consumption it would involve an expenditure of £900,000. After some discussion the recommendation was ultimately adopted. As there is considerable latitude in the terms of the recommendation it will be interesting to watch how much or how little this compulsory notification will mean when it comes into force.

Scottish Association of Medical Women.

The annual meeting of this association was held last week in the Faculty Hall, Glasgow. A paper was read by one of the members on the Present Position of Registered Medical Women. Previously to 1891 there were no medical women in Scotland with the exception of one or two in Edinburgh, while now both Edinburgh and Glasgow have got a considerable number and there are others practising in Dundee, Aberdeen, Paisley, Dunfermline, Inverness, Ayr, Orkney, and Kirkmichael. The association has been formed, as its constitution states, (1) to form a bond of union between the registered medical women in Scotland and to keep them in touch with one another; and (2) to have an organisation which can deal with questions of interest and importance to medical women.

Appointment of Physician to the Glasgow Police Force.

Dr. R. T. Halliday has been appointed physician to the Glasgow police force by the unanimous vote of the town council. The salary is at the rate of £400 per annum, with an allowance of £10 per annum for bandages, &c., and £50 for travelling expenses.

Nov. 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Poor-law Reform.

THE report of the Viceregal Commission on Poor-law Reform which was appointed in May, 1903 (the Commissioners being Mr. W. L. Micks, Mr. G. Murnaghan, M.P., and Dr. E. Coey Bigger), has now been issued and will doubtless be commented upon at length in your columns. The references of the commission were in six heads, and of these the first five had to do with suggested reform of the existing Poor-law system, the directions being mainly as to the possibility and advisability of amalgamating unions and workhouses. The sixth reference gave the commission power to inquire and to report generally whether any, or what, administrative and financial changes were desirable in order to secure a more economical system for the relief of the sick, the insane, and all classes of destitute poor in Ireland without impairing efficiency of administration. The recommendations of the Commissioners under this reference are drastic and make melancholy reading unless we can believe that reform will follow quickly upon the issue of the report. And who believes that? The Commissioners find that the poverty of Ireland cannot be adequately dealt with by any poor-relief law (such as that of 1838) and look to the development of the country's resources for a remedy of existing conditions. Among 43 specific recommendations for reform we find the present workhouse system condemned, the foundation of sanatoriums for consumptive patients and of additional cottage hospitals urged, while the formation of a State medical service is advocated, the cost to be defrayed out of money voted by Parliament.

Ulster Medical Society.

On Nov. 1st the opening meeting of the session 1906-07 took place in the Medical Institute, Belfast. After the reading of the minutes Dr. W. Calwell in a few valedictory remarks resigned the presidentship which he has occupied with such conspicuous success during the past two years and was accorded a very warm vote of thanks. His courtesy, business habits, and hospitality have made his years of office memorable in the annals of the society. The new President, Dr. D. P. Gaussen, having taken the chair, proceeded to deliver a very interesting address on the Recent Progress in Medical Science, in which he dwelt specially on Sir A. E. Wright's late epoch-making work. On the conclusion of his remarks a hearty vote of thanks was passed to Dr. Gaussen, on the motion of Dr. J. Campbell, seconded by Dr. A. B. Mitchell.

The Appointment of a Superintendent Medical Officer of Health of Belfast.

The worst possible impression has been made upon the citizens of Belfast by what has followed upon the appointment of the superintendent medical officer of health. At the monthly meeting of the city corporation held on Nov. 1st Alderman Sir James Henderson asked the chairman of the public health committee why the reply received from the Local Government Board in regard to the appointment of Mr. Hugh William Baillie was not included in the minutes of the public health committee. Alderman Dr. J. King Kerr denied that this letter was read before the committee, an explanation which Sir James Henderson refused to accept, moving as an alternative, "That the letter confirming the appointment of the medical superintendent officer of health be read at this quarterly meeting." The Lord Mayor of Belfast objected to the reading of the letter in question on the grounds that it might prejudice the position of Mr. Baillie and Sir James Henderson's motion was defeated by 16 votes to 6. As might have been guessed, the attempt at concealment proved perfectly futile, for directly after the meeting two of our leading local newspapers published the suppressed letter. In this letter the Local Government Board say that they "have no option but to signify their formal approval of the council's selection of Dr. Hugh William Baillie as medical superintendent officer of health of Belfast"; but they intimate that had they considered themselves to possess the necessary discretionary powers they would have felt grave doubts as to sanctioning the choice of the corporation of Belfast. The letter goes on to add that "the Board have more than once recorded their decided opinion that the sanitary condition of that city requires the services of a medical officer of wide experience and possessing a special training as medical officer or assistant medical officer of health acquired in some larger towns where public health problems of a similar kind to those confronting Belfast have had to be dealt with." It would be difficult to find in the United Kingdom any town where problems exactly similar to those of Belfast are in existence because the public health of Belfast is rapidly coming to enjoy a pre-eminently bad position. The view of Mr Baillie's position taken by the chairman of the public health committee of the city council of Belfast is that for a time he should be guided by Mr. Conway Scott, "one of the ablest and most honest sanitary officers in the United Kingdom," but it will strike all medical men as a retrograde proposal that a superintendent medical officer of health should be expected to take his cue from a sanitary officer. Dr. King Kerr was originally reported to have made no time qualification in the matter of Mr. Bailie's subserviency to the sanitary officer, but he has since explained that owing to the acoustic properties of the council chamber the reporters had misrepresented him. He only meant that Mr. Bailie should be under Mr. Conway Scott's tutelage at the beginning of his official career. I send you the following verses which appeared in the *Northern Whig* of Nov. 3rd. They exactly hit off the situation:—

Though my critics [*Dr. King Kerr explains* who swarm
in the local press,
Are men whom I'd scorn to cast a glance at;
Though I pay attention even less
To "concocted" articles in THE LANCET;
Yet I think it's due to my bosom friends,
Who perhaps may suffer from such detraction,
To say—and with this the matter ends—
My remarks, as published, need correction.

My colleague, Bailie, quite sure may be
That I never desired to hurt his feelings,
And for the reports he must blame, not me,
But our Chamber's faithless walls and ceilings;
Nor should blame upon the reporters fall—
They are very trustworthy men and active—
The fault is entirely the fault of the hall;
Its acoustic properties are defective.

What I wished to say (if my words had not
Been grossly distorted by bricks and lime),
Was, that he should trust to Conway Scott,
Not altogether, but for a time.
And when I read my remarks in print
Next morn, you may guess I was quite dismayed;
For of course I only meant to hint
He should trust to Scott—till he'd learnt his trade.

Now a critic may say six hundred quid
Is a mighty salary to be earning,
If a man can merely do as he's bid
Whilst "for a time" his job he's learning.
But in this some comfort you may discern,
The death-rate stands at so high a figure,
No matter how long he takes to learn,
It can't very well grow any bigger!

RICARDO.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Two Lawsuits of Medical Interest.

TWO lawsuits of interest from a medical point of view have just been decided by the Tribunal of the Seine. The first related to the child of a medical student who was put out to nurse by the father and who infected the nurse. The unfortunate woman, who is the mother of four children and who did not recognise her ailment, is at the present time in a deplorable condition. She claimed 12,000 francs damages and the court awarded her 6000 and, in addition, severely reprimanded the student on the ground that he, better than anyone else, should have recognised the condition of his child. The second case which came up on a point of law was only indirectly of medical interest. It came out in evidence that the child, for whose possession the parents came into court, had been put out to nurse and had returned from the foster-mother suffering from tuberculosis. The disease had been contracted from the foster-mother's husband. If the inspectors, both male and female, whose duty it is to take cognisance of children put out to nurse and of their nurses had properly done their duty the condition of the tuberculous man would have been recognised and the child might have been saved.

The First International Congress of Alimentary Hygiene.

This Congress was held in Paris from Oct. 22nd to 27th under the patronage of the President of the Republic, all the Ministers being honorary presidents. The Congress was opened by M. Mirman, representing M. Bourgeois, Minister of Foreign Affairs, in an allocution which was received with applause. The papers in the various sections were both numerous and interesting, but as I have already given your readers the programme [1] I need not repeat it here.

The Serum Treatment of Dysentery.

At a meeting of the Society of Pædiatrics held on Oct. 16th M. Ribadeau-Dumas stated that he had had under his care two children, aged respectively five and three years, who had arrived from Russia suffering from dysentery. Both had blood-stained mucous stools, the one 30 and the other 65 in the 24 hours. Cultures showed the presence of Shiga's bacillus. After an unsuccessful trial of various remedies the anti-dysenteric serum of M. Dopter was injected. The number of the stools diminished rapidly and the serum effected a marked improvement. The elder child, however, succumbed to broncho-pneumonia but the other recovered and left the hospital. At the post-mortem examination on the body of the elder child the typical dysenteric lesions were found. M. Lesne related the case of a boy, aged 14 years, suffering from dysentery in which he had used the serum with success.

A Spring Apparatus for Fractures of the Clavicle.

At a meeting of the Medico-Chirurgical Society held on Oct. 8th M. Dupuy gave an account of a method of treatment of fractured clavicle by means of a spring apparatus. He compared the continuous and progressive action of this apparatus, which could be methodically regulated and made to act in any required direction, with the inactive and ankylosing effect of plaster splints. In support of his opinion he showed the apparatus with which he had treated a fracture of the clavicle, ten days old, with an over-riding of the fragments of four centimetres. The result proved perfect. The apparatus can be kept in place for about 20 days. Its only objection is that at present it is rather heavy but M. Dupuy hopes to be able to improve it in this respect.

Tuberculosis.

At the last sitting of the permanent committee on the prophylaxis of tuberculosis which was held under the presidency of M. Debove a report by Professor Grancher was handed in. The report dealt with an inquiry carried on under the direction of Professor Grancher into the primary schools of the 15th and 18th arrondissements of Paris. During the last three years that the inquiry has been carried on 4227 children have been examined and the proportion of young children in whom a characteristic predisposition to tuberculosis has been discovered varied from 11 to 19 per cent., with a mean of 15 per cent. for the school population of these two arrondissements. Each pupil was examined on three successive occasions so as to note with great care the various pathological modifications which could occur in the course of the triennium. A purely empirical method of treatment was carried out in the case of children who were definitely found to be tuberculous, consisting in the distribution of cod-liver oil and of an extra meal per diem. Marked improvement was noted in a certain number of children under this treatment and in others the development of the disease was stopped. M. Victor Dalle expressed regret that the inquiry had been limited solely to medical matters, and he gave it as his opinion that information just as valuable and precise as that which had been obtained by Professor Grancher and his colleagues should be collected under the auspices of the Director of the Assistance Publique as regards other matters of hygiene. After a short discussion the committee resolved that the municipalities should create in various healthy neighbourhoods away from the crowded towns special primary schools where tuberculous children could receive proper nourishment and appropriate medical treatment in addition to education. In the next place the committee adopted in agreement with the conclusions of M. Maury a resolution that mechanical kneading of bread should be gradually and yet as quickly as possible substituted for manual kneading. This alteration in the conditions under which bread is made, besides the hygienic advantages which it will give to consumers, should also bring about a great improvement in the hygienic condition of bakeries which would react with advantage upon the health of the workmen employed therein.

Nov. 6th.

[1] THE LANCET, Oct. 6th, p. 962.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Battle of the Clubs.

FOR the purpose of combating the abuses connected with contract and club practice the Aerzte-Vereins-Verband (Union of Medical Societies) has agreed on a concerted plan of action which, it is hoped, will prevent medical men competing with one another for such appointments. When it appears that medical men engaged in this kind of practice are being treated unjustly, warning notices will in the first place be published in the official journals of the respective countries, recommending caution to practitioners who may be willing to accept a club appointment about which doubts have arisen, and referring them to the president of the local branch of the union. Intending applicants will receive from this source all information as to the number of members, the rate of payment, the reason why the last occupant of the appointment gave it up or was discharged, and other circumstances useful to be known. In connexion with this organisation a fund has been collected for the purpose of enabling the district medical officers of Austria to enter on a strike in the event of their being involved in a serious dispute with their official superiors. This fund, to which voluntary contributions have been sent by practitioners in all parts of the empire, is intended to be the nucleus of a central emergency fund to be used in aiding all medical strikes arising out of a dispute as regards payment by public or private corporations or bodies, as well as in upholding individual practitioners in their struggle against the low fees paid under the present system of club practice. In future all vacant appointments will be brought to the notice of the union, which will give an opinion as to whether the terms offered are compatible with medical ethics and a reasonable standard of living. It will therefore not be easy, and may even be impossible, for the clubs to obtain the services of qualified men at ridiculously low rates. As the present state of affairs is legalised by a statute dating from 1882 and as this statute was enacted without asking the opinion of the medical profession, the contest will naturally be rather difficult. The majority of practitioners in Austria are not well off and most of them have to become self-supporting soon after they have obtained their qualifications. This circumstance has been the main reason why clubs could engage medical officers at very low fees, but these tactics will now be opposed by making grants to club medical officers out of employment and thereby enabling them to wait. In the long run the clubs will be forced to yield.

Dendritic Manifestations on the Skin in Cases of Arterio-Sclerosis.

A very rare cutaneous lesion was shown by Professor Ehrmann at a recent meeting of the Vienna Medical Society and it was elicited in the ensuing discussion that only seven such cases have been seen within the last 25 years. The patient was a man 45 years of age who was suffering from tertiary syphilis and atheroma of the aorta. The skin of the pelvic region showed dendritic lines of a dark red and purplish colour from 1 centimetre to 1·5 centimetres (about half an inch) wide and narrowing at the end. The longitudinal axis of the lines was darker than the margins; rubbing and massage of the skin made the lines disappear but they returned soon afterwards. The lines were slightly raised above the skin, especially in cold air or in a weak light. Professor Ehrmann said that he had seen four such cases up to the present time and all four suffered from arterio-sclerosis in a high degree, while three of them had been infected with syphilis. In two instances he was able to obtain a post-mortem examination of such patients and had found extensive sclerosis of the arteries of all calibres. The explanation of the unusual lines was the following. Through the calcification and sclerosis of the walls of the vessels the normal propelling power of the elastic walls of these vessels could not be made to act on the column of blood in them during the diastole of the left ventricle. They were therefore always filled with a stream of slowly progressing blood; pressure or rubbing of the skin might move the blood column away but it was immediately afterwards replaced. Microscopic sections of small arteries excised from the patient showed the presence of spirochæta pallida in their walls and thus explained the sclerotic condition of the media and adventitia.

School Hygiene.

Professor Burgerstein recently commenced his lectures on hygiene and took for the subject of his introductory address the importance of inculcating the principles of hygiene in schools. He said that the chief difficulty to be overcome was the indifference of the general public to the essentials of modern hygiene—namely, cleanliness, temperance, fresh air, and abundant light. In order to popularise these four beneficent agencies the children ought to be taught their importance. It would be of great assistance in impressing such lessons on the receptive minds of children if all parts of the school premises were in accordance with hygienic principles and if the teachers lived up to hygienic ideals. Outdoor occupations, such as gardening and walking in the fields, should be encouraged among town-bred children as being not only good for the health but advantageous from an educational point of view.

Cretinism on the Sea-coast.

At a recent meeting of the Society for Neurology and Psychology Professor von Wagner read a paper on some researches undertaken by him on the order of the Government with respect to the occurrence of cretinism and idiocy in certain parts of the empire of Austria. Bearing in mind the dictum of Hirsch that these two cerebral disorders are very rare, if not actually unknown, on the sea-coast, he selected the coast of Dalmatia for his inquiries. Here he found altogether 15 cretins (seven males and eight females) in a population of 600,000 persons. As regards the frequency of goitre and cretinism in other countries of the empire, it appears that in the mountainous regions the proportion is as high as 240 per 100,000 inhabitants, whilst goitre alone in these districts is as frequent as 100 or 140 per 1000 inhabitants. Now goitre does not occur in Dalmatia, not a single case having been noticed among the recruits from that country, so that an explanation of the phenomena of cretinism in these 15 individuals had still to be found. Examination showed them to be actual dwarfs, the tallest being 106 centimetres (3 feet 6 inches) in height; their ages varied from five to 41 years. In the adults the genital organs were of an infantile type, with an absence of secondary sexual developments; most of them had the fontanelle open and none of them had any trace whatever of a thyroid gland. These facts suggested that the condition was not due to the unknown agent which produced cretinism in mountainous places, as it was associated there with goitres of sometimes enormous size. The investigation was extended with the object of ascertaining whether there was consanguinity among the parents of the cretins and it was found that in all the places in question there were only a dozen different family names and that consanguineous marriages had been the rule for many generations. The result of such long-continued mingling of cognate blood was disastrous to the growth and development of the osseous and reproductive structures, whilst the intellectual powers had as yet not suffered in a high degree. It is remarkable, however, that although the same social conditions prevailed on many of the small islands there was no instance of degeneration in their population, so that the influence of certain miasmatic or telluric agents could not be denied.

Nov. 5th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Racial Peculiarities of the Negro Brain.

DURING the nineteenth century many attempts have been made in various countries to determine the distinctive points of difference between the Caucasian and the negro brain. It has been abundantly proved that the negro has a lower stature, less body weight, less skull capacity, and a smaller brain, especially in the frontal lobes. Moreover, his face occupies the greater portion of the total length of his head; in comparison with the white man his anterior cranium is less developed than his posterior, and his occipital foramen is placed further back in relation to the total projection of the head but more forward in relation to the cranium only. During the last three years fresh interest has been aroused by Dr. G. Elliot Smith's discoveries at the Egyptian Government School of Medicine. He found that every form of "affenspalte" (or sulcus occipitalis lunatus) that occurs in the gorilla, chimpanzee, orang, gibbon, and most of the cebidæ occurs also in the human brain. He argues that the fact that this sulcus occurs equally both in its operculated and simple forms in three such different groups of people as the Soudanese, Egyptians, and some of the Balkan races, would seem to indicate that it is a common heritage of all mankind from some simian ancestor. It is thus a most interesting confirmation of the Darwinian theory. In Dr. Mall's anatomical laboratory of the Johns Hopkins University Dr. R. B. Bean has been working for some time at the racial differences existing in the negro brain and has now published[1] the result of his investigations during the examination of 103 American negro brains and 49 American Caucasians. He shows that there is a difference in the size and shape of the two classes of brains, a depression of the anterior association centre and a relative bulging of the posterior association centre in the negro; that the genu of the corpus callosum is smaller in the negro, both actually and in relation to the size of the splenium; and that the cross-section area of the corpus callosum is greater in relation to brain weight in the Caucasian, while the weight of negro brains is actually less. Unfortunately, the coloured people of Baltimore include many gradations of colour due to mixture with whites and very few of them to-day are full-blooded Guinea Coast negroes. Yet the figures and diagrams seem to show that the low-class Caucasian has a larger brain than a better-class negro. The average male Caucasian brain weighed 1341 grammes, while the corresponding negro average was 1292 grammes. If we accept the views of modern physiologists we believe that the posterior association centre is objective, while the anterior is subjective. Let us see how far the relative differences found in the association centres of the two races correspond with the known characteristics of them both. The Caucasian, more particularly the Anglo-Saxon, is subjective, dominant and masterful, full of determination, will power, self-control, with a high development of the ethical and æsthetic faculties. He is a great reasoner and chiefly frontal, while the negro is rather occipital or parietal. The black man is in direct contrast by reason of absence of some of the white man's powers and a huge development of the objective qualities. The negro is affectionate, very emotional, then sensual, and under excitement passionate. He has love of ostentation, of outward show, of approbation, love of music and singing, and undeveloped artistic power and taste, for he makes a good artisan. He has instability of character, lack of self-control (especially in sexual relationship), and a certain peculiar bumptiousness caused by too high an appreciation of himself and his surroundings.

[1] American Journal of Anatomy, vol. v., No. 4.

He is meek and submissive but prone to become violent when any sudden danger appears. His body senses, smell, and sight are usually well developed. Those politicians who consider that the black citizen in any country should have exactly the same rights as his white neighbour might be invited to consider some of the anatomical racial differences.
Nov. 1st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Incurable Consumptives.

A PUBLIC meeting at Newtown, New South Wales, passed a resolution commending the proposal to establish a hospital for the care of incurable cases of pulmonary tuberculosis and urging the provision of immediate temporary accommodation, it being assumed that there are over 4000 tuberculous patients in New South Wales with no special institution for their treatment.

The Milk-supply of Sydney.

An important judgment was recently given by the Arbitration Court of New South Wales with regard to the delivery of milk, the effect being to exempt city and suburban dairymen from a rule applying to the companies supplying country milk. These are four in number and supply more than half the total milk used in Sydney, while the town milk-supply comes from over 500 dairies in the city and suburbs. The court held that it was of the utmost importance that the supply of town milk should be maintained and that if it were seriously curtailed the death-rate of young infants would undoubtedly rise. When suckling infants were fed on cows' milk the town milk appeared to be far the most advantageous for them and that for two reasons. The first was that even when both the milks were delivered twice a day the town milk reached the children in a decidedly shorter time after the milking than could the country milk, and the second was that the provision which necessarily was made for refrigerating and preserving the country milk, together with the natural desire of the milk-carters to get some free afternoons for themselves, led to the country milk being often delivered only once a day. When that was done the consumer had to take a day's supply at once, and the condition to which the milk was reduced by the time it had stood in the heat of summer for 24 hours in a workman's cottage on a dusty road, and its deadly effects on the delicate stomach of a very young infant, could be easily imagined. On the other hand, the town milk was always delivered twice a day, immediately after each milking. The town clerk of Sydney recently prepared a report on a proposal to establish municipal milk depôts. The report shows how beneficial such depôts have been in various countries. The town council of Sydney has no legal authority to establish such depôts and it has now been advised to endeavour to obtain the necessary powers from Parliament.

Protection of Children.

A change is about to be made with regard to the inspection of children boarded out under the Children's Protection Act of New South Wales. All children under 12 months, whether apparently ill or not, within a radius of two miles from the Royal Alexandra Hospital for Sick Children are to be taken to the hospital once a fortnight for examination and their condition noted.

School Hygiene.

The Minister of Education in Victoria has repeatedly admitted that the ventilation and lighting of the State schools are defective and £90,000 are to be spent in remedying faults. It has been suggested that medical officers should be appointed to examine the State school-children periodically but the Minister has not yet agreed to this proposal.

Ventilation of City Buildings.

Professor Osborne of the University of Melbourne has been collecting and analysing samples of air from different places. At the ocean beach he found the proportion of carbon dioxide in the air to be 4 volumes in 10,000 and the same in the open air in a country suburb. In a public office in the city of Melbourne it was 17·5; in a bank, 22; in the reading room of the public library, 23·3; and 26 in an insurance office.

A Proposed Veterinary College.

The Premier of Victoria has forwarded to the Premiers of the other Australian States a proposal to establish an Australian veterinary college, the funds to be provided by the different State Governments. The only veterinary college in Australia is a private enterprise in Melbourne. It is proposed to establish a thoroughly equipped and up-to-date college in Melbourne under the joint supervision of the Department of Agriculture and the University. If the States would not participate in the scheme the Government of Victoria would establish the institution by itself.

Medical Man Assaulted.

Dr. G. H. Taylor, the State Government pathologist, of Sydney, was assaulted by a lunatic while standing in a Sydney street. He received a violent blow but is fortunately not much the worse for it. The lunatic could give no reason for the assault.

An Unqualified Practitioner Charged with Murder.

An unqualified practitioner in Adelaide, known as "Dr." Sheridan, who got into trouble some time ago, has found it necessary to fly from justice. The dead body of a woman who had been reported as missing was found by the police at Sheridan's house. At the inquest the jury returned a verdict that death was due to an illegal operation performed by Sheridan who was committed for trial for murder. He has, however, disappeared and the police are unable to trace him.

Melbourne Medical Association.

The annual meeting and supper of the Melbourne Medical Association was very largely attended and was in every respect a great success. The new president was Dr. R. R. Stawell and the guest of the evening was Mr. Justice Cussen. The retiring president, Dr. F. H. Cole, delivered an amusing address entitled "Doctors we have Met in Fiction," taking his characters from Le Sage, Dickens, Charles Read, and Marryat.
Oct. 5th.

Obituary.

EDWARD DRUMMOND, M.D. EDIN., M.R.C.S. ENG., D.P.H. CAMB.

Dr. Edward Drummond died at his residence at St. Anne's-on-the-Sea, Lancashire, on Oct. 20th. Born at Blyth, Northumberland, in 1843, he was the son of the late Thomas Drummond, whose ancestor was "out" in 1715, and was a cadet of the Perth family. On his mother's side he was descended from the Northumberland Lilburnes, the family from which sprang the famous Colonel Lilburne, "the leveller" of Cromwellian times. Dr. Drummond received his medical education partly at Aberdeen but principally at the University of Edinburgh, where he completed his class attendance at the age of 20 years and graduated as M.D. after reaching full age in 1864. In the following year he also became a Member of the Royal College of Surgeons of England. After some years spent as house surgeon to the York County Hospital he commenced practice in Oldham, where he soon acquired one of the largest practices in the town, in addition to which he held a number of public appointments. Owing to overwork his health compelled him to dispose of his practice in 1876. He afterwards travelled extensively in France, Spain, Portugal, Italy, and other parts of Europe and studied in the medical schools of Paris, Vienna, and Berlin, making a specialty of diseases of the throat, ear, and chest. He subsequently resided for some time at Sidmouth in South Devon and in 1881 proceeded to Rome where he succeeded the late Dr. Grigor. Dr. Drummond practised in Rome for many years and was physician to the British Embassy and the Scots College. He made many contributions to the study and investigation of malaria and the climatic conditions of the ancient city and was selected by the New Sydenham Society of London to translate the "Memoirs on Malaria" of Professor Tommasi-Crudeli, Professor Marchiafava, and Professor Celli. He also made numerous contributions to the British and American Archæological

Society of Rome (which he was chiefly instrumental in reorganising) on the conditions of health in ancient Rome and the Campagna and the causes of their deterioration in modern times. In 1883 he was offered the post of Consul-General in Italy for the kingdom of Siam and the Siamese Order but declined them. Dr. Drummond remained in Rome during the cholera epidemic of 1884 and supplied reports to the medical and lay press in this country on the progress of the epidemic, volunteering, in the event of the city being invaded by the epidemic, to reside in the Lazzaretto and to assist the staff. He was also the confidential adviser of the Ambassador, the late Lord Savile, at the cholera conference at Rome. In 1888 he took the diploma of D.P.H. of Cambridge, and since his return to England had been engaged in literary work and the bacteriological investigation of disease. In 1893 he was appointed by the conjoint board of the Universities of Oxford, Cambridge, and London as university extension lecturer on hygiene for the metropolitan area, and for the past eight years has resided at St. Anne's-on-the-Sea. He was proficient in the Greek, Latin, French, German, and Italian languages and was one of those physicians who have regard to their profession on its scientific rather than its business side. By his marriage in 1879 to Rosa, daughter of the late Henry May, of The Cliff, Dronfield, he had two daughters who as well as Mrs. Drummond survive him.

GEORGE THOMSON, M.D. ABERD., J.P.

Dr. Thomson was born in 1844 at Belhelvie in Aberdeenshire, his father being a Presbyterian minister. He studied medicine at the University of Aberdeen, graduating as M.B. and C.M. with honours in 1870 and taking the M.D. degree two years later. For a short time he practised at Braemar but in 1872 went to Oldham, succeeding to the practice of Dr. Bradbury who was in partnership with Mr. A. Thom Thomson, the practice then being carried on in the name of Thomson and Thomson, the partners, though of the same name, being in no way related. Shortly after Dr. George Thomson went to Oldham the infirmary was opened and he with Mr. Thomas Fawsitt were the two first surgeons appointed to that institution. He retained that position until 1887 when he was appointed coroner for the borough of Oldham. During his term of office of surgeon to the infirmary he contributed several papers to the medical press: Case of Fracture of the Skull in which Conjugate Deviation of the Eyes for Four Months was relieved by Trephining; Injury to Right Side of Head followed by Complete Paralysis of Right Arm; Eversion of the Bladder in an Adult; the Antiseptic System in Surgery; and Case of Primary Cerebral Abscess cured by Trephining. The duties of the coronership were so onerous that he resigned his position on the acting staff of the infirmary and was appointed an honorary consulting surgeon, later attaining the additional honour of vice-president of the institution. The initial success of the infirmary was due in a great measure to the ability and vigour which he threw into the duties, and he spared no effort, and spent much time, in promoting its general efficiency. He was public vaccinator for one of the Oldham districts and was also one of the union medical officers. He was president of the Oldham Nursing Association and was a justice of the peace for the county of Lancaster.

Dr. Thomson took great interest in all the public affairs of the town. In his duty as coroner he frequently reported to the town council defects in sanitation whenever such came under his observation and were likely to affect adversely the health of those living in insanitary surroundings. In the inquests held upon children whose death had resulted from the bad habit of being allowed to sleep with their parents or from their clothing taking fire owing to unguarded fireplaces he impressed upon the people again and again the necessity of taking such means as would prevent these untoward occurrences. He was the honorary secretary of the local branch of the National Society for the Prevention of Cruelty to Children; he was also chief surgeon for the North-Western district of the St. John Ambulance Brigade and was so assiduous in his duties that the members of the Oldham corps became exceedingly efficient and were very much drawn upon by the War Office for active service in the late war in South Africa, more ambulance men being sent to the front from Oldham than from any other town of a similar size in Great Britain. For these services Dr. Thomson received full recognition, the honour of Knight of Grace of the Order of St. John of Jerusalem being conferred upon him and he had the further honour of receiving from the hands of the King at Marlborough House the special South African medal of the Order of St. John of Jerusalem. He was also the recipient of the Honorary Associate's medal and the long-service medal. About two years ago his health began to break down owing to a cardiac affection. This gradually became worse and a little over two months ago he went to Bad Nauheim, hoping to benefit by the natural baths and the special treatment which is there carried on. He improved for a little and then gradually sank, dying there on Oct. 18th.

JOHN ARCHIBALD CAMPBELL, M.D. GLASG., F.R.S. EDIN.

THE death is announced of Dr. John Archibald Campbel at his residence in St. Heliers, Jersey, where he had been living in retirement for some years. The deceased was a native of Argyllshire and at the time of his death was in his sixty-third year. He was educated at the University of Glasgow, graduating with special commendation in 1865. Shortly afterwards he became assistant in the Durham County Asylum, and in 1867 he was appointed assistant medical superintendent of the Cumberland and Westmorland Asylum under Dr. T. S. Clouston. In 1873, when Dr. Clouston moved to Edinburgh as the superintendent of the Royal Asylum at Morningside, Dr. Campbell was asked by the committee of visitors to become his successor at Carlisle, and for 25 years he held the office to the entire satisfaction of his committee, frequently also receiving special commendation from the Commissioners in Lunacy. He was a very zealous superintendent and spared no pains to add to the reputation of his asylum as a progressive and well-managed institution. He was a frequent contributor to THE LANCET and other medical journals and in 1880 he was elected president of the Border Counties branch of the British Medical Association. When the Association met in Carlisle in 1896 he was called upon to fill the office of President of the Section of Psychology. He was elected a Fellow of the Royal Society of Edinburgh in 1878 and was for many years a prominent member of the Medico-Psychological Association.

JOHN LINDSAY MACLEAN, M.D. EDIN., L.R.C.S. EDIN.

Dr. J. L. Maclean died at his residence, Widcombe-crescent, Bath, on Oct. 19th in his seventy-sixth year. The deceased, who was born in the West Indies, held for a short time a commission in the army but he soon abandoned military life and commenced the study of medicine at the University of Edinburgh, graduating as M.D. in 1861, and in the same year he took the diploma of L.R.C.S. Edin. He took great interest in the work of medical missions and 35 years ago started a publication devoted to the interests of medical missionaries called the *Echoes of Service* and remained editor until his death. Dr. Maclean, who had for some years retired from active work, was highly esteemed in Bath. He leaves a widow but no children, his only son having died some years ago. The funeral, which took place at Locksbrook Cemetery, Bath, was largely attended.

SPENCER THOMAS SMYTH, M.D. ABERD., F.R.C.S. ENG., L.R.C.P. LOND., L.S.A.

As already recorded in our columns, Dr. Spencer Thomas Smyth died on Oct. 26th at his residence, Grosvenor-gardens, Tunbridge Wells, at the venerable age of 86 years. He was a son of Admiral Spencer Smyth and began his medical career by becoming an articled pupil in June, 1837. In October, 1840, he entered as a student at the Middlesex Hospital, where in subsequent years he was awarded various prizes and honourable certificates for materia medica, surgery, chemistry, and surgical anatomy; he was also author of a prize essay upon the pathology and treatment of puerperal insanity. In 1842 he took the diploma of M.R.C.S. Eng. and in 1860 was admitted a Fellow of the College. His other diplomas with their respective dates were L.S.A. in 1843; M.D. of King's College, Aberdeen, in 1849; and L.R.C.P. Lond. in 1876. He practised in Great

Yarmouth for 30 years and was senior surgeon of the hospital there for 18 years; in 1849 he was one of the medical officers of the Cholera Hospital; he was also surgeon of the borough gaol and police force for ten years, and second surgeon of the East Norfolk Militia. Upon leaving Great Yarmouth he took up his residence at Forest Hill, London, S.E., and was appointed honorary surgeon to the Children's Infirmary and Dispensary for Women and Children at Lower Sydenham. Upon vacating that post he was elected one of the consulting surgeons. About 11 years ago he retired from active practice and removed to Tunbridge Wells where he died.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. August von Rothmund, emeritus professor of ophthalmology in the University of Munich, at the age of 76 years.—Dr. N. Khrionshchevski, formerly professor of general pathology in the University of Kieff.—Dr. L. Tenchini, professor of anatomy in the University of Parma.—Dr. Arthur Krocker, editor of the *Deutsche Militärärztliche Zeitschrift*.

ELECTION OF DIRECT REPRESENTATIVES UPON THE GENERAL MEDICAL COUNCIL.

THE DIRECT REPRESENTATIVE FOR SCOTLAND ON THE GENERAL MEDICAL COUNCIL.

THERE are at present two candidates in the field—Dr. W. Bruce, Dingwall, the present representative, and Dr. Norman Walker, Edinburgh. In the Society of Arts Hall on Nov. 1st Dr. George A. Gibson presided at a meeting of the Edinburgh practitioners, at which Dr. Walker delivered an address on the duties of the Council in respect of medical education. It was easy, he said, to sketch the ideal scheme of medical education, easy to say that an arts degree should be a necessary precursor to the medical studies which might be extended for another year, but if he were asked his ideal of a medical education his answer would be something on these lines. He would demand a much wider and fuller preliminary education than was at present required, making it lead up to a degree either in arts or science. They had to deal with the five years' curriculum, and he was convinced that four of these must be devoted to medicine, and the student should be required to have passed his first professional before attending any of the classes in the medical curriculum proper. He was convinced that nothing but good would result from a one portal system. He thought that in the interests of the public as of the medical profession they should press for legislation requiring that the composition of patent medicines should be indicated on the label and he disagreed with those who said that club practice was iniquitous, for coöperation was abroad.

To the Editors of THE LANCET.

SIRS,—May I ask by your courteous permission for space in your columns to return my warmest thanks to the 765 electors who have already kindly promised me their support in the coming contest for the Direct Representation of the Scottish registered practitioners in the General Medical Council. I am, Sirs, yours faithfully,

Nov. 2nd, 1906. WILLIAM BRUCE.

To the Editors of THE LANCET.

SIRS,—Through the medium of THE LANCET we would desire to ask the medical practitioners of England and Wales to give their support at the coming election to Dr. Leonard Strong MacManus.

Dr. MacManus has during his 20 years' residence in South-west London been brought into touch with the profession in London and is universally well spoken of as a general practitioner interested in all that affects the medical profession and keen to help on all occasions to ameliorate their condition when hardly dealt with. Since the development of the new organisation of the British Medical Association he, realising the possibilities of its aims and objects if taken full advantage of, has been untiring in attendance on committees formed locally and at the head office, and has come prominently forward in the Representatives' meetings as an advocate for legislative interference, where found necessary to improve not only the status of the medical profession, but also the health and happiness of the laity, who look to them for guidance.

As is now well known, Mr. Andrew Clark, late chairman of the central council of the Association, has magnanimously decided to retire in favour of Dr. MacManus, realising that there was a great feeling that a general practitioner from London should be elected, and that Dr. MacManus was worthy of support. We can therefore with confidence ask for the unstinted support of every medical practitioner, and through either of our honorary secretaries shall be pleased to hear of those who will promise to do all they can to return him as one of their Representatives to the General Medical Council.—We are, Sirs, yours faithfully,

E. ROWLAND FOTHERGILL, } Hon. Secretaries to the
CHAS. J. MARTIN, } Election Committee.

111, Northcote-road, Wandsworth-common, S.W., Nov. 3rd, 1906.

*** This letter was also signed by 110 registered medical men resident in different parts of the kingdom and we are requested to state that copies of the address of Dr. MacManus, which appeared in THE LANCET of Oct. 13th, can be obtained of the honorary secretaries.—ED. L.

To the Editors of THE LANCET.

SIRS,—In connexion with Dr. Henry Langley Browne's candidature for election on the General Medical Council I wish to point out to your readers that Dr. Browne is a public vaccinator. As this fact is not mentioned in the Medical Directory for 1906 I think in a spirit of fairplay I may claim for the information to your readers the same publicity you accord to Dr. Browne's letter in THE LANCET.

I am, Sirs, yours faithfully,

West Bromwich, Nov. 3rd, 1906. N. L. USHER SOMERS.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

THE following is the list of agenda for the annual meeting of Fellows and Members to be held on Thursday, Nov. 15th, at 3 P.M.:—

1. The President to place before the meeting the report of the Council.

2. To be moved by Mr. JOSEPH SMITH:—

That this twenty-second annual meeting of Fellows and Members reaffirms the desirability of admitting Members to direct representation on the Council, which as now constituted does not represent the whole corporation.

3. To be moved by Dr. W. G. DICKINSON:—

That this meeting recommends that, when the question of admitting women to the College examinations is brought before the Fellows and Members, this should be done either by means of a corporate meeting or by a poll of the Fellows and Members, inasmuch as the meetings as hitherto held under the regulations of the Council have no authority to determine any question whatever and their resolutions on other subjects are almost invariably disregarded by the Council.

4. To be moved by Mr. A. S. MORTON:—

That in pursuance of their resolution in July last the Council is hereby requested to make further representations to the Government urging the necessity of amending the Midwives Act next Session, in order that provision may be made to secure just remuneration for professional services rendered by medical men under that Act.

5. To be moved by Mr. GEORGE BROWN:—

That in view of the overcrowding and straitened circumstances which exist in the Profession, this Meeting strongly urges the Council to use all its influence to secure the raising of the standard of the Preliminary Examinations in General Education and in Science, and this Meeting is further of opinion that the time has arrived when Chemistry, Physics, and Biology should be treated as matters of preliminary education, and an examination passed in them before the commencement of medical studies.

Medical News.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on Nov. 1st at Caxton House, Westminster, Dr. F. W. Champneys being in the chair. A letter was considered from Dr. F. J. Smith, honorary secretary of the Metropolitan Counties branch of the British Medical Association, asking the Board to receive a deputation to discuss certain suggested amendments to the rules. The Board decided that a copy of the revised rules should be sent to Dr. Smith, and that he should be informed that if he will specify in writing any further amendments which the Metropolitan Counties branch may deem necessary they will receive the consideration of the Board. A letter was considered from Dr. J. R. Kaye, county medical officer of the West Riding, forwarding, on behalf of a meeting of county medical officers, certain suggestions for the amendment of the rules as revised by the Board. It was decided that Dr. Kaye should be thanked for his letter which will receive the consideration of the Board. A letter was considered from the clerk of the Denbighshire county council forwarding a copy of a resolution passed by the local supervising authority for the county, urging the Board to issue a Welsh translation of the rules and forms. The Board decided that the letter should be referred to the standing committee. The consideration of the following recommendation of the standing committee was adjourned:—

> That local supervising authorities having appointed inspectors of midwives be requested to furnish the Board with copies of the rules that have been drawn up for the inspectors' guidance, and that where no rules have been compiled the local supervising authority be asked whether such rules, if drawn up by the Central Midwives Board, would be acceptable.

The Board decided that where an application is made by, or on behalf of, a midwife whose case has been definitely dealt with after citation and hearing by the Board, for the reconsideration of such case, the secretary do inform the applicant that the Board is not prepared to reopen cases in which it has given formal judgment and refer the applicant to the Act and to the rules.

MEDICO-LEGAL SOCIETY.—The fifth annual meeting of this society was held on Oct. 23rd at 22, Albemarle-street, W., Mr. Justice Walton, the President, being in the chair. The report of the secretaries was read and adopted and showed that there were 129 members made up of medical men, barristers-at-law, and solicitors. The treasurer's report proved the society to be in a sound financial condition. The President with a few complimentary remarks on the work of the society again accepted office for the coming session. Mr. A. J. Pepper, F.R.C.S., and Dr. James Scott (medical officer at Brixton Prison) were elected to the council. The secretaries, Mr. R. Henslowe Wellington, 5, Essex-court, Temple, and Dr. S. B. Atkinson, Adelphi-terrace, were also re-elected. After the business of the meeting was concluded a paper entitled "Euthanasia, Is it ever Justifiable?" was read by Dr. S. Russel Wells. He treated the subject in a very broad-minded manner and dealt with all sides of the question, saying that killing was not necessarily murder, and while the individual had no right to deprive a fellow-creature of his life, acting on his own initiative and for his own ends, still, as a servant of the State and acting by direction of the law and for the good of the community, killing fellow-men might not only be justifiable but even laudable, and that such killing had not only the sanction of their moral sense but also of the Church and Holy Scripture itself. Considering the dangers of abuse Dr. Wells argued that whilst the friends desired the death of a relative the case might be one where there was a hope of recovery or an heir-at-law might be desirous of coming into his future estate. Assuming that errors of diagnosis or of prognosis were never made how was the exact time to be fixed at which it would be justifiable to end a person's suffering? The strongest practical objection to the proposal would be the fear of the medical man and his visit would be viewed with a fear that he had come to kill rather than to cure. The effect would be to drive a larger number of sufferers into the hands of quacks and charlatans who *ipso facto* would be considered safer because they had not the right to kill. Taking all arguments into consideration Dr. Wells admitted that he was driven to answer the question as to whether euthanasia was ever justifiable or advisable in the negative.

THE COMMISSIONERS IN LUNACY have issued certain new rules under the Lunacy Acts providing for the registration of all details concerning the patients in every institution for the reception of lunatics.

VIOLA ODORATA.—At a meeting of the Therapeutical Society held at the Apothecaries' Hall on Oct. 30th, Sir Lauder Brunton presiding, Mr. H. Wippell Gadd read a paper on Further Work on the Chemistry of *Viola Odorata*. All attempts to isolate and to identify a glucoside from the violet leaves had, he said, failed. Similarly there was no evidence of a ferment being present. The only positive fact resulting from his experiments was that the leaves and their preparations yield under certain conditions glucose. Although this was so a number of physicians had found preparations of violet leaves to be active. Sir Lauder Brunton asked whether the glucose had been determined before and after treatment with acid, as the difference would give a measure of the amount of glucoside present. He added that the action of the active principle resembled that of saponin and if this could be established some pure form of saponin might be tried in cancer. The infusion of the leaves did seem to be of use in lessening pain and the offensiveness of the discharge. Dr. W. A. Potts followed with a paper entitled "Some Notes upon the Use of *Viola Odorata* in Actual Practice" in which he referred to the remarkable effect of *Viola odorata* in controlling offensive discharges and said that if only on this account it was useful in malignant disease.

OPENING OF THE NEW BUILDINGS OF NORTH LONDON OR UNIVERSITY COLLEGE HOSPITAL.—The Duke of Connaught opened the new buildings of the North London or University College Hospital, Gower-street, on Nov. 6th. His Royal Highness, who was accompanied by the Duchess of Connaught, was received at the entrance by the Duke of Bedford, Lord Reay, Lord Monkswell, the Bishop of London, Sir James Reid, Sir T Barlow, Mr. A. E. J. Barker, Dr. S. H. C. Martin, Dr. H. Batty Shaw, and other members of the reception committee. He was then conducted to the large general out-patient waiting-hall and presented with an address from the hospital committee and medical staff by the president of the hospital, the Duke of Bedford. Lord Reay, the president of University College, London, delivered an address on behalf of the council of University College. The Duke of Connaught in his reply referred to the increase in the number of patients and observed that advances in medical science had necessitated a new hospital more suited to modern requirements than the former building. The Bishop of London having offered a prayer, the hospital was formally declared open by His Royal Highness who concluded his visit by unveiling a bust of the late Sir J. Blundell Maple through whose generosity the hospital has been rebuilt.

LITERARY INTELLIGENCE.—Messrs. Bousfield and Co., Portugal-street, London, W.C., announce for immediate publication "The History of Nursing in the British Empire," by Mrs. S. A. Tooley. Mrs. Tooley, who may be remembered as the biographer of Florence Nightingale, has been assisted in her new work by members of the medical profession and as the movement which the book chronicles is quite an important feature of modern life it should prove interesting reading.—The current issue of *Nature Notes* announces that during the absence of Professor Boulger in South America the magazine will be edited by the honorary secretary of the Selborne Society, Mr. Wilfred Mark Webb. All editorial communications should be sent to his private address, Odstock, Hanwell, W. —The editorship of *Medical Electrology and Radiology* has recently passed into the hands of Dr. H. Lewis Jones, whose work in the cause of treatment by electrical and other physical agents is well known throughout the kingdom. In the September number is a leading article on the Radiotherapy of Tuberculous Lymphatic Glands. Good results have been obtained in other countries, but so far this method of treatment has not been tried in England. Dr. Jones contributes a very valuable paper on Cervical Ribs and their Relation to Atrophy of the Intrinsic Muscles of the Hand, which includes a summary of the cases recorded up to the present. A new use for x rays is recorded by Dr. A. J. Cleveland who reports two cases of

chilblains successfully treated. The same writer describes some cases of ataxy which were much improved by faradism. There are other interesting papers as well as some pages of notes and abstracts which give this number a high value.

UNIVERSITY OF CAMBRIDGE.—Mr. A. C. Seward, F.R.S., of St. John's and Emmanuel Colleges has been elected Professor of Botany in succession to Dr. Marshall Ward.—The State Medicine Syndicate reports that during the present year 54 candidates presented themselves for the examinations in sanitary science; 28 passed both parts of the examination and received diplomas in public health. For the examinations in tropical medicine there were 17 candidates, of whom 13 were successful in obtaining the University diploma.—The examiners for the several examinations for M.B. during the current academical year are as follows:—Chemistry: J. E Purvis and Dr Sell. Physics: P. V. Bevan and T. G. Bedford. Biology: A. E. Shipley, F.R.S., and A. W. Hill. Anatomy: Professor A. Macalister, F.R.S., and Dr. S. E. Denyer, C.M.G. Physiology: J. Barcroft and Dr. M. S. Pembrey, F.R.S.—Dr. D. MacAlister has been appointed examiner in medicine for the current term in the place of Professor Osler who is unable to examine.

THE COMMITTEE ON INDUSTRIAL DISEASES.—The departmental committee which was recently appointed to "inquire and report what diseases and injuries, other than injuries by accident, are due to industrial occupations, are distinguishable as such, and can properly be added to the diseases enumerated in the Third Schedule of the Workmen's Compensation Bill, 1906," has now begun its inquiry. The committee proposes to investigate the following diseases and injuries which have been suggested for its consideration—viz., gradual poisoning from the vapour of carbon disulphide, dinitrobenzol, dinitrotoluol, and anilin; gradual poisoning from carbonic oxide gas, sulphuretted hydrogen gas, and chlorine gas; alkaloidal poisoning from African boxwood in shuttle-making; illness set up by nitrous fumes, hydrochloric acid fumes, ammonium chloride fumes, and sulphur fumes; compressed air illness (caisson disease); chrome ulceration of the skin; various trade eczemas; fibrosis of the lungs from inhalation of silicious or metallic particles (potter's asthma and grinder's phthisis); pneumonia from inhalation of basic slag dust; miner's nystagmus and miner's "beat knee" and "beat hand"; neurosis due to vibration; cardiac dilatation in slate quarries; and glanders. Correspondence relating to the inquiry should be addressed to Mr. Frank Elliott, secretary to the committee, at the Home Office, Whitehall, S.W. Anthrax, ankylostomiasis, and poisoning by lead, mercury, phosphorus, and arsenic are already included in the Third Schedule of the Workmen's Compensation Bill and are not, therefore, within the committee's terms of reference.

HUDDERSFIELD MEDICAL SOCIETY: ANNUAL DINNER.—The annual dinner of this society was held at the George Hotel, Huddersfield, on Oct. 30th, under the presidency of Dr. Thomas Smailes. The company, which numbered about 70 persons, included the Mayor of Huddersfield, Alderman B. Broadbent, J.P. After the loyal toasts had been duly honoured, Dr. F. W. Robinson proposed the toast of "The Guests," which was responded to by Dr. J. B. Hellier and Dr. Alfred Mantle. Dr. Mantle regretted that the annual dinner afforded the only opportunity for many of those present to meet. In London there was a scheme to amalgamate all medical societies and he thought that the societies of Halifax, Bradford, Leeds, and Huddersfield should amalgamate. He looked upon the medical society as the best means of getting the post-graduate course after qualification. Dr. MacGregor, who proposed the toast of "Our Public Institutions," congratulated the Mayor upon the success of his efforts to improve the conditions under which infants were reared and he also congratulated the health authorities on having carried their recent Bill through Parliament which was designed to prevent the terrible slaughter of infantile life. Referring to the decrease in population shown by the last census, he made an earnest appeal to the clergy to devote their energies to the moral upbringing of children. The high standard of morality which Greece had at one time shown to the world had fallen when marriage became unpopular. The same result was inevitable in Huddersfield and he appealed to the clergy to do what they could to put an end to the evil. In responding the Mayor, referring to the compulsory notification of births in Huddersfield, said that the idea had been evolved in his town and was absolutely new. In no other country, or in any other part of Great Britain, was such an idea in working—that the birth of an infant was the concern of the State primarily as a matter of public health. He had written to every civilised country in the world and had obtained answers from the whole of them. The question he had asked was: "Is your registration of births connected in any way with the administration of public health?" In every case the answer had been that there was no connexion in any way.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Royal Commission on Bovine Tuberculosis.

MR. BURNS has informed Mr. FIELD that certain experiments are being made by the Royal Commission on Bovine Tuberculosis which will not be completed until to-day (Nov. 10th) and that it is intended that the report and the appendix should be issued as soon after as possible. The total expenditure upon tuberculous commissions up to Sept. 30th last amounts to about £52,200.

HOUSE OF COMMONS.

WEDNESDAY, OCT. 31ST.

Sleeping Sickness.

Mr. REES asked the Under Secretary of State for the Colonies whether any report had been received from Dr. Koch upon the sleeping sickness and what steps were being taken to preserve the British Central African Protectorate from this disease.—Mr. CHURCHILL answered: No report has, as far as is known, been received from Dr. Koch, whose commission was appointed by the Imperial German Government. It is proposed, as soon as the rains are over, that two special medical officers selected by the Liverpool School of Tropical Medicine, which has generously offered to pay the salaries of both officers, should proceed to the British Central Africa Protectorate, study the local conditions, and suggest precautionary measures. It is presumed that these officers will arrive in the Protectorate in January next.

Report on Chicago Meat Establishments.

Sir WILLIAM BULL asked the Secretary of State for Foreign Affairs whether he could now give further information with reference to the report by Mr. Fenn, the consul at Chicago, with reference to the meat establishments.—Mr. RUNCIMAN, who replied, said: As was stated in reply to a question on June 26th last the report was sent to the Local Government Board. So far as my right honourable friend is aware it is not proposed to publish it.

Sanitation in the Highlands.

Mr. WEIR asked the Secretary for Scotland whether he would lay upon the table of the House the recent report by Dr. F. Dittmar, the medical inspector for Scotland, on the general sanitary condition of the burgh of Cromarty; and consider the expediency of directing the medical inspector to prepare a similar report in regard to the burgh of Stornoway.—Mr. SINCLAIR replied: The report on Cromarty is not I am advised of sufficient general interest to justify its being printed as a Parliamentary paper. The Local Government Board for Scotland has not received any complaints which would lead it to suppose that there is any urgent or exceptional reason for instituting an immediate medical inspection of Stornoway, which will be overtaken by the medical inspector in due course.

Royal Commission on Vivisection.

Mr. RIDSDALE asked the Secretary of State for the Home Department whether he was aware that it had been decided to hold the sittings of the Royal Commission on Vivisection in private, and whether there had been any recent precedent for such a course.—Mr. GLADSTONE answered: I am aware of the decision of the Royal Commission, but, as I said last week, the question whether anyone shall be admitted during the taking of evidence is a matter within the discretion of the Commissioners. In several recent cases the evidence has been taken in private; I may instance the Motor Car Commission, the War Commission of 1902, and the Royal Commission on Food-supply in Time of War.

Medical Relief in London.

Mr. ALDEN asked the President of the Local Government Board whether his attention had been called to a Home Office return for 1904 of the number of deaths in London upon which a coroner's jury had returned a verdict of death from starvation or death accelerated by privation, together with the observations furnished to the Local Government Board by boards of guardians with reference to such cases; whether he was aware that there were 42 such deaths in London, of which ten were in the eastern district; and whether seven out of those ten were in the Whitechapel district; whether he had considered the attitude of the Whitechapel guardians with reference to medical and other out-relief; and what steps, if any, the Local Government Board or the Poor-law inspectors of the Whitechapel district had taken to prevent a recurrence of deaths in Whitechapel of poor persons needing medical or other relief from the like cause.—Mr. BURNS replied: I have seen the return which gives the facts as stated in the question. I am aware of the attitude of the guardians of the Whitechapel Union towards outdoor relief; but I would point out that in each of the cases in that union mentioned in the return there does not appear to have been any application for outdoor relief. The applications are stated to have been for admission to the infirmary and they seem to have been immediately granted. I do not understand that there was any default on the part of the guardians or their officers in any of the cases referred to.

Vaccination Officers and Non-vaccination.

Mr. A. H. SCOTT asked the President of the Local Government Board whether he would instruct vaccination officers to stay further proceedings being taken by them against parents for non-vaccination pending the legislation promised for next year.—Mr. BURNS answered: Looking to the statutory duties which devolve on the vaccination officers in this matter it does not appear to me that I am empowered to give them any such instructions as those suggested.

THURSDAY, NOV. 1ST.

Colonel Hobb's Report on Chicago Meat Yards.

Mr. HENNIKER HEATON asked the Secretary of State for War whether it was his intention to publish Colonel Hobb's Report on the Chicago Meat Yards; and, if not, whether he could state generally if the report was unsatisfactory or otherwise; what was roughly the quantity of American tinned meat in stock for the British army and its cost; and whether His Majesty's Government would send an officer to report on Australian tinned or preserved meats, with a view to supplying the British army from this source.—Mr. HALDANE replied: It is not intended to publish this report which is now under the consideration of various Government departments. No statement can be made regarding it until a final decision has been arrived at. About 3,250,000 pounds of American tinned meat are held at present by the army and its cost is about £80,000. There is no present intention of sending an officer to report on Australian tinned meat.

Care of the Feeble-minded.

Mr. PICKERSGILL asked the Prime Minister whether a new reference had been committed to the Royal Commission on the Care and Control of the Feeble-minded; and whether, having regard to the fact that the Commission had now been sitting for two years and to the necessity for action, he would represent to the Commission the desirability of reporting forthwith on the matters originally referred to it.—Sir HENRY CAMPBELL-BANNERMAN answered: My honourable friend will have seen in the press that the original reference of the Royal Commission on the Care and Control of the Feeble-minded has been extended. The procedure of a Royal Commission is a matter to be determined only by itself, but I have no reason to believe that the extended reference will cause any great delay in the issue of the report of this Commission.

Army Nurses and Dancing.

Mr. RENDALL asked the Secretary of State for War whether he would explain why nurses at Netley Hospital and in the army's service generally were not permitted when off duty, except when on furlough, to take part in public or private dances, seeing that the prohibition did not apply to medical men in the same hospital; whether a highly trained professional class such as nurses were to be placed in a different position on the ground of sex to officers in the army, who, provided they were on duty at the appointed time, had no restrictions placed on their use of time when off duty; and whether he would at once free the nurses from this interference with their liberty.—Mr. HALDANE replied: I have consulted the Nursing Board which contains amongst its members many ladies of great experience in these matters. They have advised me to the following effect. The Nursing Board requires for His Majesty's nursing service gentlewomen who are devoted first and foremost to their work for its own sake and the sake of their patients and who therefore desire to live quietly and unostentatiously, without looking for much gaiety. Occasional attendance at operas, theatres, concerts, and other places of amusement is not incompatible with the due performance of their duty, and it is allowed at the discretion of the matron. But the late hours involved in attendance at balls and dances, in the opinion of the Board, incapacitate them for giving their proper attention to their patients on the following day.—An honourable Member: What does the Secretary for War mean by "these matters"?—Mr. HALDANE: I referred to the arrangements which have been made for the performance of the duties of the nurses. I may say that in this case the weight and authority of experienced matrons and highly experienced ladies have prevailed over my natural instincts.

MONDAY, NOV. 5TH.

Proceedings of the Royal Commission on Vivisection.

Mr. LUPTON asked the Secretary of State for the Home Department whether he was aware that the British Union for the Abolition of Vivisection, which consisted of numerous affiliated societies throughout the United Kingdom, had refused to take part in the proceedings of the Royal Commission unless the constitution of that body was remedied, and a direct medical representative of the antivivisectionists was appointed; and what course he proposed to take.—Mr. GLADSTONE answered: I regret the decision of the British Union and hope it will be reconsidered, but I have nothing to add to my previous answers on this subject except to say that the commission contains two medical men of distinction whose names were suggested by antivivisection societies.

TUESDAY, NOV. 6TH.

Medical Inspectors for Scotland.

Mr WEIR asked the Secretary for Scotland whether, in view of the fact that whilst the Local Government Board for Ireland employed one medical commissioner, seven medical inspectors, nine general inspectors, and four temporary inspectors, and two temporary assistant inspectors, the Local Government Board for Scotland employed one medical member, one medical inspector, and four general superintendents who were inspecting officers, he would state on what grounds he refused to approach the Treasury for an additional staff of medical inspectors for Scotland.—Mr. SINCLAIR replied: They are not, in my opinion, required.

BOOKS, ETC., RECEIVED.

DAVOS PRINTING COMPANY, LIMITED, Davos, Switzerland.

Davos as Health-Resort. A Handbook containing contributions by A. F. Bill, M.D., A. Brocke, M.D., the Very Rev. Dean J. Hauri, D.D., F. Jessen, M.D., W. G. Lockett, P. K. Mühle, Dr. Phil., E. Nienhaus, M.D., H. Philippi, M.D., W. Schibler, M.D., Dr. Phil., Hofrat K. Turban, M.D., H. J. A. van Voornveld, M.D.; and Introduction by W. R. Huggard, M.A., M.D., F.R.C.P. Lond., H.B.M. Consul at Davos, Author of "A Hand book of Climatic Treatment." Price not stated.

WOOD, WILLIAM, AND CO., New York.

A Complete Handbook for the Hospital Corps of the U.S. Army and Navy and State Military Forces. By Charles Field Mason, Major and Surgeon, U.S. Army. Approved by the Surgeon-Generals of the Army and Navy. Price 18s. net.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT AND CO., London.)

A Guide to Urine Testing: for Nurses. By Mark Robinson, L.R.C.P., L.R.C.S. Ed. Third edition, revised. Price 1s. net.

WYMAN AND SONS, LIMITED, London.

The History of the Wine Trade in England. By André L. Simon, F.R.Hist.S., Author of "The History of the Champagne Trade in England." Volume I. The Rise and Progress of the Wine Trade in England from the Earliest Times until the Close of the Fourteenth Century. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BRANDER, R. L., M.B., B.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Woburn Sands District of the counties of Bedford and Buckingham.

DIXON, R. G. M.B., Ch.B. Leeds, has been appointed House Surgeon at the General Infirmary, Leeds.

FLINT, E. R., M.B., Ch.B. Vict., has been appointed House Surgeon at the General Infirmary, Leeds.

GIBBS, N. E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Third House Surgeon at the Royal London Ophthalmic (Moorfields Eye) Hospital.

GIRLING, CHARLES JOHN, M.B. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for No. 3 District, Wimborne and Cranborne Union.

GOULDEN, CHARLES, M.B., M.C., F.R.C.S., has been appointed Senior House Surgeon at the Royal London Ophthalmic (Moorfields Eye) Hospital.

HUDSON, A. C., M.D., B.C., F.R.C.S., has been appointed Second House Surgeon at the Royal London Ophthalmic (Moorfields Eye) Hospital.

HUMMEL, J. J., M.S. Vict. and Leeds, M.B. Leeds, has been appointed House Physician at the General Infirmary, Leeds.

LANDMAN, A. J., M.B., Ch.B. Leeds, has been appointed House Physician at the General Infirmary, Leeds.

MACHARDY, T., M.B., M.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cullen District of the county of Banff.

MACVEAN, H. J., M.B., Ch.B. Vict., has been appointed House Surgeon at the Bradford Royal Infirmary.

ROBERTSON, J. J., M.B. Glasg., late Surgeon P. & O. S.N.Co., has been appointed Admiralty Surgeon and Agent at Portpatrick.

SCARBOROUGH, O. L., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Obstetric Officer at the General Infirmary, Leeds.

THOMAS, JOSIAH TELFER, L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Camborne (Cornwall) Public Dispensary.

TIMOTHY, J. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Nantgaredig District of the county of Carmarthen.

TURNER, GEORGE GREY, M.B., M.S. Durh., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Royal Victoria Infirmary, Newcastle-upon-Tyne.

VEALE, R. A., M.B., B.S. Lond., has been appointed Resident Ophthalmic Officer at the General Infirmary, Leeds.

WALKER, A. L., M.B., Ch.B. Leeds, has been appointed Medical Officer in charge of the Ida and Robert Arthington Homes of the General Infirmary, Leeds.

WALL, J. BLIGH, M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Miller Hospital and Royal Kent Dispensary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index);

ABERYSTWYTH INFIRMARY AND CARDIGANSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £150 per annum, with board and residence.

BARNSLEY HALL ASYLUM, Bromsgrove, Worcestershire.—Senior Assistant Medical Officer and Deputy Medical Superintendent. Salary £200 per annum, with quarters, board, washing, and attendance.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100.

CANCER HOSPITAL, Fulham-road, S.W.—Surgical Registrar. Honorarium £26 5s. per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £60 a year, with board, apartments, and laundress.

DORCHESTER COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £140, rising to £180, with board, lodging, &c.

GLOUCESTER COUNTY ASYLUMS.—Junior Assistant Medical Officer. Salary £150, rising to £180, with board, apartments, and washing.

GLOUCESTER GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

GORDON HOSPITAL FOR FISTULA, &c., Vauxhall Bridge-road, S.W.—Resident House Surgeon.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Physician. Also Obstetric Physician.

HALIFAX UNION POOR LAW HOSPITAL, Salterhebble.—Resident Medical Officer (female). Salary £100 per annum, with apartments, rations, and washing.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HOSPITAL FOR WOMEN, Soho.—Clinical Assistants to the Gynæcologists in the Out-patient Department.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months, renewable. Salary £60 per annum, with board and residence.

JARROW-ON-TYNE, PALMER MEMORIAL HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and residence.

KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £80 a year, with board and lodging.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon, unmarried. Salary £120 without board, £80 with board, and £20 extra for dispensing.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Pathologist and Assistant to the Honorary Medical Staff. Salary £150 per annum.

MEDICAL DEPARTMENT OF THE ROYAL NAVY.—Examination for not more than Six Commissions.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland-street, W.—Anæsthetist.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—House Physician and Resident Medical Officer for the Maternity Department, Senior Assistant for the Out-patient Department, Anæsthetist, Clinical Assistant, and Supervisor of Massage Treatment. All females.

NORTHAMPTON, SAINT ANDREW'S HOSPITAL FOR MENTAL DISEASES.—Third Assistant Medical Officer. Salary £150 per annum, rising to £200, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Clinical Assistants in the Out-patients' Department.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, Charing Cross, W.C.—Clinical Assistants.

ST. GEORGE'S UNION INFIRMARY, Fulham-road, West Brompton, S.W.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

TOTTENHAM HOSPITAL, London, N.—Two Honorary Assistant Physicians. Also Honorary Assistant Surgeon. Also Honorary Physician or Surgeon to the X Ray and Electrical Department.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.—Second Anæsthetist.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary at rate of £120 per annum, with rooms, gas, coal, and attendance.

WINCHESTER, ROYAL HANTS COUNTY HOSPITAL.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Wolverhampton, in the county of Stafford.

Births, Marriages, and Deaths.

BIRTHS.

CRAWFORD.—On Oct. 25th, at Palmerston, Swanley, Kent, the wife of J. Dawson Crawford, M.D., of a son.

DAWSON.—On Nov. 2nd, at 4, Grange Park-road, Leyton, the wife of E. Rumley Dawson, M.R.C.S., L.R.C.P. Lond., of a son (Hubert Rumley).

ROBINSON.—On Oct. 30th, at the Grange, Bletchingley, Surrey, the wife of C. A. Robinson, M.B., B.C. Cantab., of a son.

MARRIAGE.

PIPER—DOWNES.—On Nov. 1st, at St. Matthias, Earl's Court, Francis Parris Piper, M.B. Lond., L.R.C.P., M.R.C.S., to Heather Aileen, fourth daughter of the late Commissary-General Downes, C.B., J.P., and of Mrs. Downes.

DEATHS.

COLLINS.—On Oct. 31st, at St. Swithins, South Parade, Southsea, Surgeon-Lieutenant-Colonel Robert Collins, M.B., late Army Medical Staff, aged 69 years.

ROBERTS.—On Oct. 31st, at Close Gate, Salisbury, John Roberts, M.D., M.R.C.P., in his 85th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A POOR JOKE.

AMONG the agenda constituting the programme of business before the Newcastle-on-Tyne board of guardians at a recent meeting we find the following set down as a motion against the name of the Rev. James Jack:—

> That on and after the 26th instant, no bodies of any unclaimed inmates of the Workhouse dying there shall be given to the Medical Authorities for purposes of dissection, unless the said inmates voluntarily desire the same.

Did Mr. Jack intend for conscientious reasons to put a little obstruction in the way of medical education or did Mr. Jack intend to make a little joke? He has succeeded in the latter. Unless he is a very advanced mystic, able to imagine some method by which an unclaimed body can express a voluntary desire not to be dissected, we think that Mr. Jack must have been moved by a sense of humour to put forward his motion.

DISGUSTING CIRCULARS.

To the Editors of THE LANCET.

SIRS,—Within a week of the birth of my first child I received the inclosed disgusting advertisement in an open envelope with a half-penny stamp. I suppose it is unduly optimistic to hope that a time will ever come when it will be impossible to send such things through the post. Still, the thought that an inquisitive clerk or postman or even domestic servant might easily open such an envelope and jump to the conclusion that the list had been asked for is not exactly pleasing.

I am, Sirs, yours faithfully,

Nov. 5th, 1906. F.

*** The advertisement in question is the circular of one John Mellinger, of New Southgate, and is a "descriptive price list of reliable simple and harmless preventive appliances by which parents may limit their families according to their means." With our correspondent we have wondered if the Post Office would not soon take steps to prevent itself from being the medium for the dissemination of such matter.—ED. L.

UNFORTUNATE ADVOCACY.

WE have received from a correspondent a copy of a provincial newspaper which contains the exuberant advertisement of a "duly qualified chiropodist and foot specialist from Berlin, Paris, New York, and 33, Cambridge-road, London, N.W." The advertiser publishes, with the usual assertion that all bunions, callosities, and deformed and ingrowing toe-nails can be absolutely removed without causing the slightest pain, testimonials from residents in the neighbourhood, and among them occurs the following:—

> From Dr. ——
> Mr. Siemms has removed for me a deep-rooted and obstinate corn with entire success, and absolutely without pain or any feeling of discomfort. I can heartily recommend him to any one so afflicted. Oct. 18th, 1906.

We omit to mention the medical man's name, but we strongly recommend him to insist that Mr. Siemms should remove the testimonial from his urgent address to "those requiring his professional services."

"MILK CURE."

To the Editors of THE LANCET.

SIRS,—Referring to a letter in THE LANCET of Nov. 3rd, 1906, regarding "milk cure" in the treatment of ear disease by one Mr. Gadgil of Bombay, I would be much obliged if you would make clear by publishing this letter that I have no connexion whatsoever with the gentleman carrying on business at "Dr." Gadgil's ear dispensary, Thakurdwar, Bombay.

I am, Sirs, yours faithfully,

S. B. GADGIL,

Nov. 3rd, 1906. House Surgeon, Guest Hospital, Dudley.

AN EXPENSIVE HANDSHAKE.

A WIDOW, keeping a boarding house, recently sued a male defendant in the Chester county court and recovered £2 10s. damages with costs on account of injuries caused by his shaking hands with her. According to her evidence he had called upon her one evening accompanied by another man and after they had had some music the visitors took their leave when the defendant gripped his hostess's hand so hard that she screamed. This he apparently treated as a joke, for he went away laughing, but a medical man who attended her found her little finger fractured and she had to have her hand in splints for five weeks. It is to be hoped that the incident may be treated as a warning by others who without breaking the bones of those whom they greet or part from appear to think that the conventional handshake is an occasion for displaying what writers of fiction long ago acquired the habit of describing as a "grip of iron." It is not necessarily the grip of friendship, for it is bestowed with impartiality upon the merest acquaintance. Nor

is it necessarily a proof of herculean strength on the part of him who grips, although in some instances it may be intended to convey that impression. It is possibly in many cases the unpremeditated act of one who if he gets "first hold" grinds his victim's bones together and sends his rings if he wears any, into his flesh, quite unconscious of the havoc he is causing. A polite and conventional regard for the feelings of others prevents any complaint being made, although, no doubt, if the victim whose hand was thus unduly squeezed were to scream as the widow in "Sleepy Chester" did she would receive an apology and would not be met with derision. £2 10s. does not seem a large sum to pay in such circumstances for fracturing a finger, considering the amount of discomfort and inconvenience which its temporary uselessness entails.

WRIGHT'S COAL TAR INHALER.

THIS is a simple and effective device for obtaining the steady vaporisation of antiseptic tar vapour or eucalyptus or pine oils for inhalation purposes. The source of heat is an ordinary night-light. Above this light is placed a hollow absorbent block which is saturated with the antiseptic oil before the night-light is lighted. The method is satisfactory; the apparatus occupies a conveniently small space and gives off a stream of antiseptic vapour the output of which can be readily regulated. Messrs. Wright, Layman, and Umney of 48, Southwark-street, London, S.E., are the proprietors.

A NINETEENTH-CENTURY DR. SANGRADO.

MANY stories are current showing that the public in its patronage of unorthodox medical advisers is liable to be

> "To their virtues very kind
> And to their faults a little blind."

Not always, however, for a recent issue of a South Wales newspaper states that a curious entry in the register of Blaenavon Church, Monmouthshire, is as follows:—

> 7th June, 1812, Richard Morris, aged 50, a native of North Wales, died at Nant-y-glo, bled to death by a quack doctor.

THE VACUUM CLEANALL MACHINE.

THIS apparatus is designed for the cleansing of fabrics by forcing through them a grease solvent, such as soap solution or weak ammonia, or light petroleum spirit. The principle of working is simple. Inside and at the bottom of a tall cylinder of glazed ware is situated a metal spring resembling that used in upholstery; on the top of this spring and about half-way up the jar rests a perforated container which fits the jar closely. In this container or cage the article to be cleaned is placed. A perforated cover keeps the article in its place. Through the lid which closes the cylinder itself is a steel rod terminating outside in a handle by means of which the article may be alternately compressed and released, the spring acting against the pressure. In this way the cleansing fluid is thoroughly forced through the article to be cleaned. The apparatus works very satisfactorily but we do not understand why the word "vacuum" is applied to its description, since, of course, its successful working does not depend on the production of a vacuum or even a partial vacuum. Care should be taken to keep the machine away from any naked lights when inflammable spirit is being used as the cleansing agent. Besides ordinary cleansing purposes the machine may be used for sterilising fabrics with antiseptic fluids. The makers are the Vacuum Cleanall Machine Syndicate, Limited, and their address is 21, Brewer-street, Regent-street, London, W.

A SOAP SAVER.

THERE is no doubt much soap is wasted through leaving the tablet wet in the soap dish. The soap saver of the Sanitary Soap Saver Company, of 21, Islington, Liverpool, is designed to obviate this and consists simply of what may be called a saucer made with corrugations, resting on which is an inverted cup also made with corrugations, but which is smaller in dimensions than the "saucer." The result is to form a very effectual drainer, so that the tablet of soap keeps dry.

Messrs. Blackwell, Hayes and Co., Birmingham.—The mean results obtained by employing the titration method of the incinerated tartrate with standard acid on the one hand, and the direct titration of the acid tartrate with standard alkali on the other were for the "extra quality" specimen 99·00 per cent. and for the ordinary specimen 97·70 per cent. of acid tartrate of potassium respectively.

Osteopathy.—The claim of the half-educated, self-sufficient persons advocating this treatment on the ground that they "take a stand in advance of the philosophy taught in the thousands of medical colleges throughout the world" is simply rubbish.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Bradford Observer, The Irish Times, Macclesfield Courier, Newcastle Chronicle, Daily News, Broad Arrow, Scientific American, Literary Digest, Western Mail (Cardiff), Birkenhead News, The Tribune, Chatham Observer, Wakefield Express, Westminster Gazette, Nottingham Express, Sheffield Independent, Nottingham Guardian, Shrewsbury Chronicle, Exeter Gazette, &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 8th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 2	29·185	W.	...	60	52	49	48	50	Raining
,, 3	29·320	S.	0·10	85	54	47	46	48	Overcast
,, 4	29·430	E.	0·02	67	49	45	47	48	Cloudy
,, 5	29·470	W.	0·59	82	54	43	45	47	Cloudy
,, 6	29·694	S.E.	...	54	52	40	41	41	Foggy
,, 7	29·384	S.	0·50	65	55	40	49	50	Cloudy
,, 8	29·318	N.E.	0·41	53	53	50	51	52	Raining

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond street (3 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (12th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Clinical Evening. Cases will be shown by Dr. G. Little, Dr. P. Weber, Dr. Poynton, Dr. J. F. H. Broadbent, Dr. R. A. Young, Mr. G. Watson, Mr. E. M. Corner, Mr. P. Sargent, and Mr. T. P. Legg. Cases in attendance at 8 P.M.

TUESDAY (13th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M.: Special Discussion on the Operative Treatment of Non-malignant Ulcer of the Stomach and its Chief Complications, with Indications, Limitations, and Ultimate Results. Speakers: Dr. H. White, Mr. A. W. M. Robson, Sir Dyce Duckworth, Mr. H. G. Barling, Dr. S. Martin, Mr. B. G. A. Moynihan, Dr. N. Moore, Mr. G. E. Gask, Dr. H. D. Rolleston, Sir William Bennett, Dr. H. French, Mr. M. Moullin, Dr. H. P. Hawkins, Mr. G. H. Makins.

FARADAY SOCIETY (92, Victoria-street, S.W.).—8 P.M.: Papers:—Mr. W. P. Digby: Some Investigations Relative to the Depreciation of Electrolytically-produced Solutions of Sodium Hypochlorite.—Mr. C. V. Biggs: The Hermite Electrolytic Process at Poplar.—Dr. A. C. C. Cumming: On the Electrochemistry of Lead.

WEDNESDAY (14th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M.: Discussion on Gonorrhœa. Short Papers will be read by Dr. L. Smith, Dr. E. Michels, and Dr. R. Andrews.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M.: Meeting.

THURSDAY (15th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—5 P.M.: Demonstration: Prof. W. D. Miller: Some Observations and Experiments on the so-called Erosion of the Teeth.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND (11, Chandos-street, Cavendish-square, W.).—3 P.M.: Papers:—Dr. R. P. Smith: The International Congress on the Care of the Insane held in Milan last September.—Dr. R. W. Branthwaite: Drunk and Disorderly.—Dr. P. Stewart: Diagnostic Value of Examination of the Cerebro-spinal Fluid.

FRIDAY (16th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5 P.M. Cases will be shown by Dr. R. I. Spriggs; Dr. T. R. Whipham, Dr. E. Cautley, Dr. Carpenter, Dr. Hawthorne, Dr. J. P. Parkinson, and others. Paper:—Dr. J. Burnet (Edinburgh): Psoriasis in Childhood.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Pathological Demonstration. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Diseases of the Eye. 5 P.M.: Lecture:—Clinical.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. J. Pringle: Clinique. (Skin.) 5.15 P.M., Lecture:—Dr. L. Williams: Some Cardio-vascular Conditions.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Sir D. Duckworth: Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. StClair Thomson: Throat and Ear. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

TUESDAY (13th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M.: Fitz-Patrick Lecture:—Dr. N. Moore: The History of the Study of Clinical Medicine in the British Islands.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Gynæcology. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Diseases of the Skin. 5 P.M.: Lecture:—Some Minor Abnormalities of the Urine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. Taylor: Clinique. (Medical.) 5.15 P.M.: Lecture:—Dr. C. T. Williams: The Sanatorium Treatment of Pulmonary Tuberculosis.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Tooth, C.M.G.: Myopathies.

CHARING CROSS HOSPITAL.—4 P.M.: Dr. Routh: Demonstration (Gynæcological). (Post-Graduate Course.)

CENTRAL LONDON OPHTHALMIC HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Mr. Wells and Mr. Maclehose: Classes of Instruction in the Use of the Ophthalmoscope, with Demonstrations of Cases.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M.: Lecture-Demonstration:—Mr. R. H. Cooper: X Rays.

WEDNESDAY (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Practical Medicine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. J. Pardoe: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Mr. A. H. Tubby: Surgical Diseases of Children.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Wells: Medicine. 3.15 P.M.: Mr. M. Robson: Surgery. 4 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Demonstration:—Mr. Stuart-Low: Middle Ear and Labyrinth.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture: Dr. W. C. Bosanquet: The Serum Treatment of Pulmonary Tuberculosis.

THURSDAY (15th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M.: Horace Dobell Lecture:—Dr. F. W. Andrewes: The Evolution of the Streptococci.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Diseases of the Eye. 5 P.M.: Lecture:—Rectal Cases.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. J. F. H. Broadbent: The Diagnosis and Treatment of Duodenal Ulcer.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

CHARING CROSS HOSPITAL.—4 P.M.: Demonstration:—Dr. Galloway: (Medical). (Post-Graduate Course.)

CENTRAL LONDON OPHTHALMIC HOSPITAL (Gray's Inn-road, W.C.).—8 P.M.: Lecture-Demonstration:—Dr. C. O. Hawthorne: Medical Ophthalmology.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M.: Chesterfield Lecture:—Dr. M. Dockrell: Tuberculosis of the Skin: I., Lupus Vulgaris; II., Tuberculosis Verrucosa Cutis; III., Scrofuloderma.

WEST END HOSPITAL FOR NERVOUS DISEASES (Welbeck-street, W.).—5 P.M.: Lecture:—Mr. L. Evans: Surgical Treatment of Contractures of the Hip due to Nervous Disease.

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FRIDAY (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Gynæcology. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Diseases of the Skin. 5 P.M.: Lecture:—Finsen, Ultra-violet, and other Methods of Photo-Therapy.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. R. Lake. Clinique. (Ear.)

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. A. Turner: Gait in Nervous Diseases.

SATURDAY (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

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